



REPLACEMENT
SHEET

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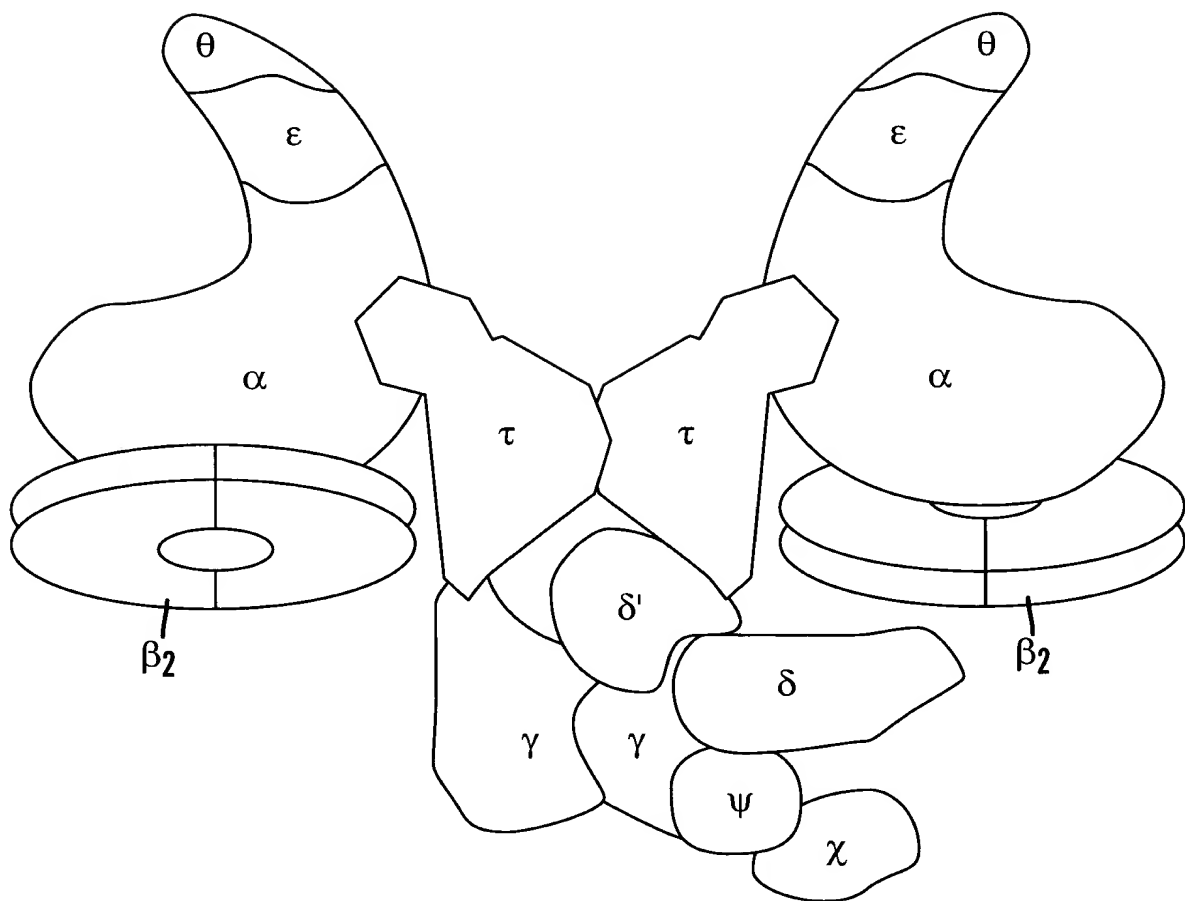


FIG. 1

REPLACEMENT SHEET

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ATP binding

E. coli	MSYQVLARKWRPQTFADVVGQEHVLTALANGLSLGRIH HAYLFSGTR GVGKTSIARLLAK
B. subtilis	MSYQALYRVFRPQRFEDVVGQEHITKTLQNALLQKKFS HAYLFSGPR GTGKTSAAKIFAK
	*** * * * * . * * * . * * * * * * * * * * * * * * * . . **
E. coli	GLNCETGITATPCGVCDNCREIEQGRFVDLIEIDAASRTKVEDTRDLLDNVQYAPARGRF
B. subtilis	AVNCEHAPVDEPCNECAACKGITNGSISDVIEIDAASNNGVDEIRDIRDKVKFAPSAVTY
	. *** * * * * . * * * * * . * * * * * . * * * * * . * * * * * .
E. coli	KVYLIDEVHMLSRHSFNALL KTLEPPPEH VVKFLLATDPQKLPVTILSRCLQFHLKALDV
B. subtilis	KVYIIDEVHMLSIGAFNALL KTLEPPPEH CIFILATTEPHKIPLTIIISRCQRFDFKRITS
	*** . ***** . ***** * * * * * . * * * * * . * * * * * . * * * * * .

FIG. 2

REPLACEMENT
SHEET

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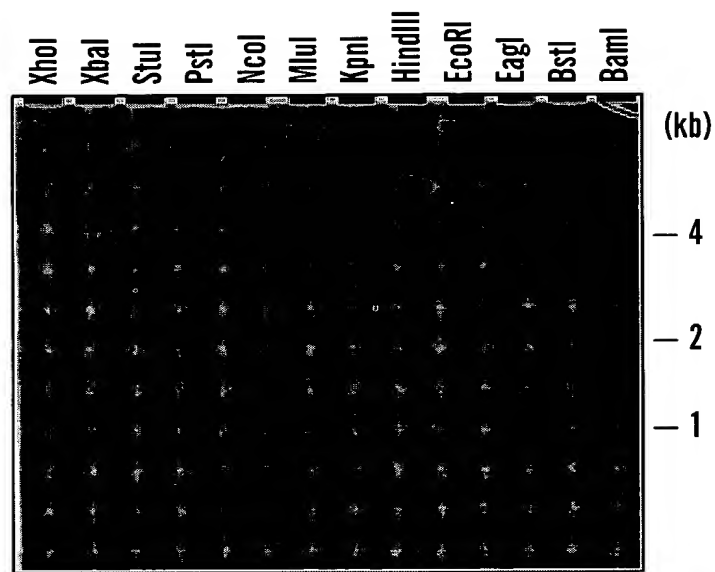


FIG. 3

REPLACEMENT SHEET

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TCCGGGGGTG	GGGTTCACAG	GTAGACCCCG	GCCCCCTCCG	TGAGCCCCCTT	TACCCAGGCC	60
GCCACCTCCT	CCAGGGGGGC	CAAGCGGTGC	AAGGAGAGGA	ACGTCCGCAC	CACGCCCTAT	120
ACTAGCCTT	GTG AGC GCC CTC TAC CGC CGC TTC CGC CCC CTC ACC TTC CAG GAG GTG GTG				S.D.	180
	met ser ala leu tyr arg arg phe arg pro leu thr phe gln glu val val					(17)
GGG CAG GAG CAC GTG AAG GAG CCC CTC CTC AAG GCC ATC CGG GAG GGG AGG CTC GCC CAG					CAC	240
gly gln glu his val lys glu pro leu leu lys ala ile arg glu gly arg leu ala gln						(37)
GCS TAC CTS TTC TCC GGS AC						
GCC TAC CTC TTC TCC GGG CCC AGG GGC GTG GGC AAG ACC ACC ACC GCG AGG CTC CTC GCC						300
ala tyr leu phe ser gly pro arg gly val gly val thr thr thr ala arg leu leu ala						(57)
ATG GCG GTG GGG TGC CAG GGG GAA GAC CCC CCT TGC GGG GTC TGC CCC CAC TGC CAG GCG						360
met ala val gly cys gln gly glu asp pro pro cys gly val cys pro his cys gln ala						(77)
GtG CAG AGG GGC GCC CAC CCG GAC GTG GTG GAC ATT GAC GCC GCG AGC AAC AAC TCC GTG						420
val gln arg gly ala his pro asp val val asp ile asp ala ala ser asn ser val						(97)
GAG GAC GTG CGG GAG CTG AGG GAA AGG ATC CAC CTC GCC CTC TCT GCC CCC AGG AAG						480
glu asp val arg arg glu leu arg glu arg ile his leu ala pro leu ser ala pro arg lys						(117)
GTC TTC ATC CTG GAC GAG GCC CAC ATG CTC TCC AAA AGC GCC TTC AAC GCC CTC CTC AAG					C	540
val phe ile leu asp Glu ala his met leu ser lys ser ala phe asn ala leu leu lys						(137)

FIG. 4A-1

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FIG. 4A-2

REPLACEMENT SHEET

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GAG CGC CTC GCC CGC CGC TCC GAC GCC TTA AGC CTG GAG GTG GCC CTC CTG GAG GCG GGA	1140
glu arg leu ala arg arg ser asp ala leu ser leu glu val ala leu glu ala gly	(337)
AGG GCC CTG GCC GAG GCC CTA CCC CAG CCC ACG GGC GCT CCT TCC CCA GAG GTC GGC	1200
arg ala leu ala ala glu ala leu pro gln pro thr gly ala pro ser pro glu val gly	(357)
CCC AAG CCG GAA AGC CCC CCG ACC CCG GAA CCC CCA AGG CCC GAG GAG GCG CCC GAC CTG	1260
pro lys pro glu ser pro pro thr pro glu pro arg pro arg pro glu ala pro asp leu	(377)
CGG GAG CGG TGG CGG GCC TTC CTC GAG GCC CTC AGG CCC ACC CTA CGG GCC TTC GTG CGG	1320
arg glu arg trp arg ala phe leu glu ala leu arg pro thr leu arg ala phe val arg	(397)
GAG GCC CGC CCG GAG GTC CGG GAA GGC CAG CTC TGC CTC GCT TTC CCC GAG GAC AAG GCC	1380
glu ala arg pro glu val arg glu gly gln leu cys leu ala phe pro glu asp lys ala	(417)
TTC CAC TAC CGC AAG GCC TCG GAA CAG AAG GTG AGG CTC CTC CCC CTG GCC CAG GCC CAT	1440
phe his tyr arg lys ala ser glu gln lys val arg leu leu pro leu ala gln ala his	(437)
frameshift site	
TTC GGG GTG GAG GAG GTC CTC GTC CTG GAG GGA GAA AAA AAA AGC CTG AGC CCA AGG	1500
phe gly val glu glu val leu val leu glu gly glu lys lys ser leu ser pro arg	(457)

FIG. 4B-1

REPLACEMENT SHEET

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CCC CGC CCG GCC CCA CCT CCT GAA GCG CCC GCA CCC CCG GGC CCT CCC GAG GAG GAG GTA	1560
pro arg pro ala pro pro pro pro glu ala pro ala pro pro gly pro pro glu glu val	(477)
GAG GCG GAG GAA GCG GCG GAG GAG GCG CCC GCG GAG GCG GCG GCG GCG GCG CTC	1620
glu ala glu glu ala ala glu glu ala pro glu glu ala leu arg val val arg leu	(497)
CTG GGG GGG CCG GTG CTC TGG GTG CCG GCG GCG GCG GCG GCG GCG GCG GAA	1680
leu gly gly arg val leu trp val arg arg pro arg thr arg glu ala pro glu glu	(517)
CCC CTG AGC CAA GAC GAG ATA GGG GGT ACT GGT ATA TAA TGGGGGCATG	1740
pro leu ser gln asp glu ile gly gly thr thr gly ile *	(529)
CGACCTCGGA CAAGAGACCG TGGACAACAT CCTCAAGCGC CTCCGCCCGTA	1820
GGTGCGGGGG CTCCAGAAGA TGGTGGCCGA GGGCCGCCCC TGCACGAGG	1880
GATGACCGCC ACCAAGAAGG CCATGGAGGC GGCGGCCACC CTGATCCTCC	1940
GAACGTCTGC GCCGCCGAGG TCTCCGAGGG CAAGGTGAAC CCCAAGAAGC	2000
CGCCACCATG CTGAAGAACT TCATCTA	2027

FIG. 4B-2

REPLACEMENT SHEET

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GGG	CAG	GAG	CAC	GTG	AGC	GCC	CTC	TAC	CGC	CGC	TTC	CGC	CCC	CTC	ACC	TTC	CAG	GAG	GTG	GTG	51
GCC	TAC	CTC	TTC	TCC	GTG	GGG	CCC	AGG	GGC	CTC	AAG	GCC	ATC	CGG	GAG	GGG	AGG	CTC	GCC	CAG	111
ATG	GCG	GTG	GGG	TGC	CAG	GGG	GAA	GAC	GAC	GGC	GGC	GGG	TGC	ACC	TGC	CCC	CAC	TGC	CAG	GCG	171
GtG	CAG	AGG	GGC	GCC	CAC	GGC	CCG	GAC	GTG	GTG	GAC	ATT	GAC	GGC	GCC	AGC	AAC	TCC	GTG	GTG	231
GAG	GAC	GTG	CGG	GAG	CTG	AGG	AGG	ATC	ATC	AGG	CAC	CTC	GCC	CTC	CTC	TCT	GCC	CCC	AGG	AAG	291
GTC	TTC	ATC	CTG	GAC	GAG	GCC	CAC	ATG	CTC	CTC	TCC	AAA	AGC	GCC	TTC	AAC	GCC	CTC	CTC	AAG	351
ACC	CTG	GAG	GAG	CCC	CCC	CCG	CAC	GTG	CTC	CTC	TTC	GTG	TTC	GCC	ACC	ACC	GAG	CCC	GAG	AGG	411
ATG	CCC	CCC	ACC	ATC	CTC	TCC	CGC	ACC	CAG	CAG	CAC	TTC	CGC	TTC	CGC	CGC	CTC	ACG	GAG	GAG	471
GAG	ATC	GCC	TTT	AAG	CTC	CGG	ATC	CTG	ATC	CTG	GAG	GCC	GTG	GGG	CGG	GAG	GCG	GAG	GAG	GAG	531
GCC	CTC	CTC	CTC	CTC	CTC	CGC	CTG	GCG	ATC	GCG	GGG	GCC	CTT	AGG	GAC	GCG	GAA	AGC	CTC	CTG	591
GAG	CGC	TTC	CTC	CTC	CTC	GAA	GGC	GGC	CTC	CTC	ACC	CGG	AAG	GAG	GTG	GAG	CGC	GCC	CTA	GGC	651
TCC	CCC	CCA	GGG	ACC	GGG	GTG	GCC	GAG	ATC	GCC	GCC	TCC	TCC	CTC	GCG	AGG	GGG	AAA	ACG	GCG	711
GAG	GCC	CTG	GGC	CTC	CTC	CGG	CGC	CTC	TAC	GCG	GAA	GGG	GAA	TAC	GCC	GCC	AGG	AGC	CTG	GTC	771
TGG	GGC	CTT	TTG	GAG	GTG	TTC	CGG	GAA	GGC	GAA	GGC	CTC	TAC	GCC	TTC	GGC	CTC	GCG	GGA	ACC	831
CCC	CTT	CCC	GCC	CCG	CCG	CAG	GCC	CTG	ATC	GCC	GCC	ATG	GCC	ACC	GCC	CTG	GAC	GAG	GCC	ATG	891
GAG	CGC	CTC	GCC	CGC	CGC	TCC	GAC	GCC	GAC	GCC	AGC	CTG	GAG	GTG	GCC	CTC	CTG	GAG	GCG	GGA	951
AGG	GCC	CTG	GCC	GCC	GAG	GCC	CTA	CCC	CAG	CCC	ACG	GGC	GGC	GCT	CCT	TCC	CCA	GAG	GTC	GGC	1011
CCC	AAG	CCG	GAA	AGC	CCC	CCG	ACC	CCG	GAA	CCC	CCA	AGG	AGG	CCC	GAG	GAG	GCG	CCC	GAC	CTG	1071
CGG	GAG	CGG	TGG	CGG	GCC	TTC	CTC	GAG	GCC	CTC	AGG	CCC	AGG	ACC	CTA	CGG	GCC	TTC	GTG	CGG	1131
GAG	GCC	CGC	CGC	GAG	GTG	CGG	GAA	GGC	GAA	GGC	CTC	TGC	CTC	GCT	TTC	CCC	GAG	GAC	AAG	GCC	1191
TTC	CAC	TAC	CGC	AAG	GCC	TCG	GAA	CAG	CAG	AGG	GTG	AGG	CTC	CTC	CCC	CTG	GCC	CAG	GCC	CAT	1251
TTC	GGG	GTG	GAG	GAG	GTG	GTC	CTC	CTC	GTG	GAG	GGA	GAA	GAA	AAA	AGC	AGC	CTG	AGC	CCA	AGG	1311
CCC	CGC	CCG	GCC	CCA	CCT	CCT	GAA	GCG	CCC	GCA	CCC	CCG	GGC	CCT	CCC	GAG	GAG	GAG	GTA	GTA	1371
GAG	GCG	GAG	GAA	GCG	GAG	GAG	GAG	GAG	GCC	CCG	GAG	GAG	GCC	TTG	AGG	CGG	GTG	GTC	CGC	CTC	1431
CTG	GGG	GGG	CGG	GTG	CTC	TGG	GTG	GTG	CGG	CGG	CCC	AGG	ACC	CGG	GAG	GCG	CCG	GAG	GAG	GAA	1491
																					1551

(1590)

FIG. 4C

REPLACEMENT SHEET

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Met	ser	ala	leu	tyr	arg	arg	pro	leu	thr	phe	gln	gln	val	val	gly	gln	glu	20	
his	val	lys	glu	pro	leu	lys	ala	ile	arg	glu	gly	arg	leu	ala	gln	ala	tyr	leu	40
phe	ser	gly	pro	arg	gly	val	lys	thr	thr	thr	ala	arg	leu	ala	met	ala	val	60	
gly	cys	gln	gly	glu	asp	pro	cys	gly	val	cys	pro	his	cys	gln	ala	val	gln	arg	80
gly	ala	his	pro	asp	val	val	ile	asp	ala	ala	ser	asn	asn	ser	val	glu	asp	val	100
arg	glu	leu	arg	glu	arg	ile	his	leu	pro	leu	ser	ala	pro	arg	lys	val	phe	ile	120
leu	asp	glu	ala	his	met	leu	ser	lys	ala	phe	asn	ala	leu	leu	lys	thr	leu	glu	140
glu	pro	pro	pro	his	val	leu	phe	val	ala	thr	thr	glu	pro	glu	arg	met	pro	pro	160
thr	ile	leu	ser	arg	thr	gln	his	phe	arg	phe	arg	leu	thr	glu	glu	glu	ile	ala	180
phe	lys	leu	arg	arg	ile	leu	glu	ala	val	gly	arg	glu	ala	glu	glu	ala	leu	leu	200
leu	leu	ala	arg	leu	ala	asp	gly	ala	leu	arg	asp	ala	glu	ser	leu	leu	glu	arg	220
leu	leu	leu	glu	gly	pro	leu	thr	arg	lys	glu	val	glu	arg	ala	leu	gly	ser	pro	240
gly	thr	gly	val	ala	glu	ile	ala	ala	ser	leu	ala	arg	lys	thr	ala	glu	ala	leu	260
gly	leu	ala	arg	arg	leu	tyr	gly	leu	tyr	ala	phe	gly	leu	ala	gly	thr	pro	leu	280
leu	glu	val	phe	arg	glu	glu	gly	ala	ala	met	thr	ala	leu	asp	glu	ala	arg	leu	300
ala	pro	pro	gln	ala	leu	ile	ala	ala	met	glu	val	ala	leu	ala	met	glu	arg	leu	320
ala	arg	arg	ser	asp	ala	leu	ser	leu	glu	val	ala	leu	leu	ala	gly	arg	ala	leu	340
ala	ala	glu	ala	leu	pro	gln	pro	thr	gly	ala	pro	ser	glu	val	gly	pro	lys	pro	360
glu	ser	pro	pro	thr	pro	glu	pro	pro	arg	pro	glu	ala	pro	asp	leu	arg	glu	arg	380
trp	arg	ala	phe	leu	glu	ala	leu	arg	pro	thr	leu	arg	ala	phe	val	arg	glu	ala	400
pro	glu	val	arg	glu	gly	gln	leu	cys	leu	ala	phe	pro	glu	asp	lys	ala	phe	his	420
arg	lys	ala	ser	glu	gln	lys	val	arg	leu	leu	pro	leu	ala	gln	ala	his	phe	gly	440
glu	glu	val	val	leu	val	leu	glu	gly	glu	lys	lys	ser	leu	ser	pro	arg	pro	arg	460
ala	pro	pro	pro	glu	ala	pro	ala	pro	gly	pro	pro	glu	glu	glu	val	glu	ala	glu	480
glu	ala	ala	glu	glu	ala	pro	glu	ala	ala	leu	arg	val	val	arg	leu	leu	gly	gly	500
arg	val	leu	trp	val	arg	arg	pro	arg	thr	arg	glu	ala	pro	glu	glu	pro	leu	ser	520
gln	asp	glu	ile	gly	gly	thr	gly	ile											529

FIG. 4D

REPLACEMENT SHEET

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Met	ser	ala	leu	tyr	arg	arg	arg	pro	leu	thr	phe	gln	glu	val	val	gly	gln	glu	20
his	val	lys	glu	pro	arg	leu	leu	ile	arg	thr	gly	arg	leu	ala	gln	ala	tyr	leu	40
phe	ser	gly	pro	arg	gly	val	val	thr	thr	thr	ala	arg	leu	ala	ala	met	ala	val	60
gly	cys	gln	gly	glu	asp	pro	pro	gly	val	cys	pro	his	cys	gln	ala	val	gln	arg	80
gly	ala	his	pro	asp	val	val	asp	ile	ala	ala	ser	asn	ser	ser	val	glu	asp	val	100
arg	glu	leu	arg	glu	arg	ile	his	leu	pro	leu	ser	ala	pro	arg	lys	val	phe	ile	120
leu	asp	glu	ala	his	met	leu	ser	lys	ala	phe	asn	ala	leu	leu	lys	thr	leu	glu	140
glu	pro	pro	pro	his	val	leu	phe	phe	ala	thr	thr	glu	pro	glu	arg	met	pro	pro	160
thr	ile	leu	ser	arg	thr	gln	his	phe	arg	phe	arg	leu	thr	glu	glu	glu	ile	ala	180
phe	lys	leu	arg	arg	ile	leu	glu	ala	gly	arg	glu	ala	glu	glu	glu	ala	leu	leu	200
leu	leu	ala	arg	leu	ala	asp	gly	ala	leu	arg	ala	glu	ser	leu	leu	glu	arg	phe	220
leu	leu	leu	glu	gly	pro	leu	thr	lys	glu	val	glu	arg	ala	leu	gly	ser	pro	pro	240
gly	thr	gly	val	ala	glu	ile	ala	ser	leu	ala	arg	gly	lys	thr	ala	glu	ala	leu	260
gly	leu	ala	arg	arg	leu	tyr	gly	gly	tyr	ala	pro	arg	ser	leu	val	ser	gly	leu	280
leu	glu	val	phe	arg	glu	gly	leu	ala	ala	phe	gly	leu	ala	gly	thr	pro	leu	pro	300
ala	pro	pro	gln	ala	leu	ile	ala	met	thr	ala	leu	asp	glu	ala	met	glu	arg	leu	320
ala	arg	arg	ser	asp	ala	leu	ser	leu	val	ala	leu	leu	glu	ala	gly	arg	ala	leu	340
ala	ala	glu	ala	leu	pro	gln	pro	thr	gly	ala	pro	ser	pro	glu	gly	pro	lys	pro	360
glu	ser	pro	pro	thr	pro	glu	pro	pro	arg	pro	glu	ala	pro	asp	leu	arg	glu	arg	380
trp	arg	ala	phe	leu	leu	ala	leu	pro	thr	leu	arg	ala	phe	val	arg	glu	ala	arg	400
pro	glu	val	arg	glu	gly	gln	leu	leu	ala	phe	pro	glu	asp	lys	ala	phe	his	tyr	420
arg	lys	ala	ser	glu	gln	lys	val	arg	leu	pro	leu	ala	gln	ala	his	phe	gly	val	440
glu	glu	val	val	leu	val	leu	glu	gly	lys	lys	lys	pro	asp	pro	lys	ala	pro	pro	460
gly	pro	thr	ser																464

FIG. 4E

REPLACEMENT SHEET

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Met	ser	ala	leu	tyr	arg	arg	arg	pro	leu	thr	phe	gln	gln	val	gly	gln	glu	20
his	val	lys	glu	pro	leu	leu	lys	ala	ile	arg	glu	gly	ala	ala	tyr	leu	40	
phe	ser	gly	pro	arg	gly	val	thr	thr	thr	thr	thr	ala	met	ala	val	60		
gly	cys	gln	gly	glu	asp	pro	pro	cys	gly	val	cys	pro	ala	ala	val	gln	80	
gly	ala	his	pro	asp	val	val	asp	ile	asp	ala	ala	ser	val	val	glu	asp	100	
arg	glu	leu	arg	glu	arg	ile	leu	leu	ala	pro	arg	arg	lys	val	phe	ile	120	
leu	asp	glu	ala	his	met	leu	ser	lys	ser	ala	phe	asn	lys	thr	leu	glu	140	
glu	pro	pro	pro	his	val	leu	phe	val	phe	ala	thr	thr	glu	arg	met	pro	160	
thr	ile	leu	ser	arg	thr	gln	his	arg	phe	arg	arg	leu	glu	glu	ile	ala	180	
phe	lys	leu	arg	arg	ile	leu	glu	ala	gly	arg	glu	ala	glu	glu	leu	leu	200	
leu	leu	ala	arg	leu	ala	asp	gly	ala	leu	arg	asp	ala	ala	leu	glu	phe	220	
leu	thr	leu	gly	val	pro	leu	lys	arg	lys	glu	val	glu	thr	ala	ser	pro	240	
gly	thr	gly	ala	ala	glu	ile	ala	ala	ser	leu	ala	arg	ala	glu	ala	leu	260	
gly	leu	ala	arg	arg	leu	tyr	gly	ala	gly	tyr	ala	pro	val	ser	gly	leu	280	
leu	glu	val	phe	arg	glu	ala	ala	ala	tyr	ala	phe	gly	thr	pro	leu	pro	300	
ala	pro	pro	gln	ala	leu	ile	ala	met	thr	thr	ala	leu	met	glu	arg	leu	320	
ala	arg	arg	ser	asp	ala	leu	ser	leu	glu	val	ala	leu	ala	gly	arg	ala	340	
ala	ala	glu	ala	leu	pro	gln	pro	thr	gly	ala	pro	ser	gly	pro	lys	pro	360	
glu	ser	pro	pro	thr	pro	glu	pro	pro	arg	pro	glu	ala	leu	arg	glu	arg	380	
trp	arg	ala	phe	leu	glu	ala	leu	arg	pro	thr	leu	arg	ala	arg	glu	ala	400	
pro	glu	val	arg	glu	gly	gln	lys	val	leu	ala	phe	pro	glu	phe	his	tyr	420	
arg	lys	ala	ser	glu	gln	gln	lys	arg	leu	leu	pro	leu	ala	ala	phe	gly	440	
glu	glu	val	val	leu	val	val	leu	gly	glu	lys	lys	lys	ala	his	phe	val	454	

FIG. 4F

REPLACEMENT SHEET

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	ATP site	
E.coli	MSYQVLARKWRPQTFADVVGQEHVLTALANGLSLGRHHAYLFSGTRGVGKTSIARLLAK	60
H.inf.K.....II.....KDN.L.....F..	60
B.sub.	...A.Y.VF...R.E.....ITKT.Q.A.LQKKFS.....P.T....A.KIF..	60
C.cres.	DA.T.....Y.R..E.LI...AMVRT...AF.T...A..FMLT.V.....TT.....R	113
M.gen.	-MH..FYQ.Y..IN.KQTL...SIRKI.V.AINRDKLPNG.I...E.T...TF.KII..	59
T.th.	--VSA.Y.RF..L..QE.....KEP.LKAIRE..LAQ.....P.....TT.....M	58
	Zn ⁺⁺ finger	
	* * * *	
E.coli	GLNCET---GITATPCGVCDNCREIEQGRFVDLIEIDAASRTKVEDTRDLLDNVQYAPA	116
H.inf.	...VH----V.....E.E..KA...N.I.....E.....K.V	116
B.sub.	AV...H---APVDE..NE.AA.KG.TN.SIS.V.....NNG.DEI..IR.K.KF..S	116
C.cres.	A..Y..DTVK.PSVDLTTEGYH..S.IE..HM.VL.L.....DEM.E...G.R...V	173
M.gen.	AI..LN----WDQIDV.NS..V.KS.NTNSAI.IV.....KNGIN.I.E.VE..FNH.F	115
T.th.	AVG.QG-----EDP.....PH.QAVQR.AHP.VVD.....NNS...V.E.RERIHL..L	112
E.coli	RGRFKVYLIDEVHMLSRHSFNALLKLTLEEPPEHVKFLLATTDPPQKLPVTILSRCLQFHLK	176
H.inf.	V.....I.....IGA.....CI.I...E.H.I.L.I...QR.DF.	176
B.sub.	EA.Y...I.....TAA.....P.A..IF...EIR.V.....QR.D.R	233
M.gen.	TFKK...IL.A...TTQ.WGG.....S.PY.L.IFT..EFN.I.L.....QS.FF.	175
T.th.	SAPR..FIL.A...KSA.....P..L.VF...E.ERM.P.....TQH.RFR	172

FIG. 5A

REPLACEMENT SHEET

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E.coli	ALDVEQIRHQLEHILNEEHIAHEPRALQLLARAAEGSLRDALSLTDQAIASGDQ--VST	234
H.inf.	...ET..SQH.A...TQ.N.PF.DP..VK..K.Q.I..S.....M..R.--.TN	234
B.sub.	RITSQA.VGRMNK.VDA.QLQV.EGS.EII.S..H.GM.....L....SFSGDI--LKV	234
C.cres.	RVEPDVLVKHFDR.SAK.GARI.MD..A.I.....V..G...L....VQTERGQT.TS	293
M.gen.	KITSDL:LER.ND.AKK.K.KI.KD..IKI.DLSQ.....G...L..LAI.LIVKKL.LL	235
T.th.	R.TE.E.AFK.RR..EAVGREA.EE..L...L.D.A....E..LERFLLLEGP---LTR	229
E.coli	QAVSAMLGTLDDDDQALSLVEAMVEANGERVMA LINEAAARGIEWEALLVEMGLLHRIAM	294
H.inf.	NV..N...L...NYSVDILY.LHQG...LL.RTLQRV.DAAGD.DK..G.CAEK..Q..L	294
B.sub.	EDALLIT.AVSQLYIGK.AKSLHDK.VSDALETL..LLQQ.KDPAK.IED.IFYFRDMLL	294
C.cres.	TV.RD...LA.RS.TIA.Y.HVMAGKTKDALEGFRALWGF.ADPVVMLDV.DHC.AS.V	353
M.gen.	MLKKHLISLIEMQN.L.KQFYQ.I	260
T.th.	KE.ERA..SPPGTGVAEIAASLARGKTAELG.ARRLYGE.YAPRS.VSGL.EVVFREGLY	289

FIG. 5B

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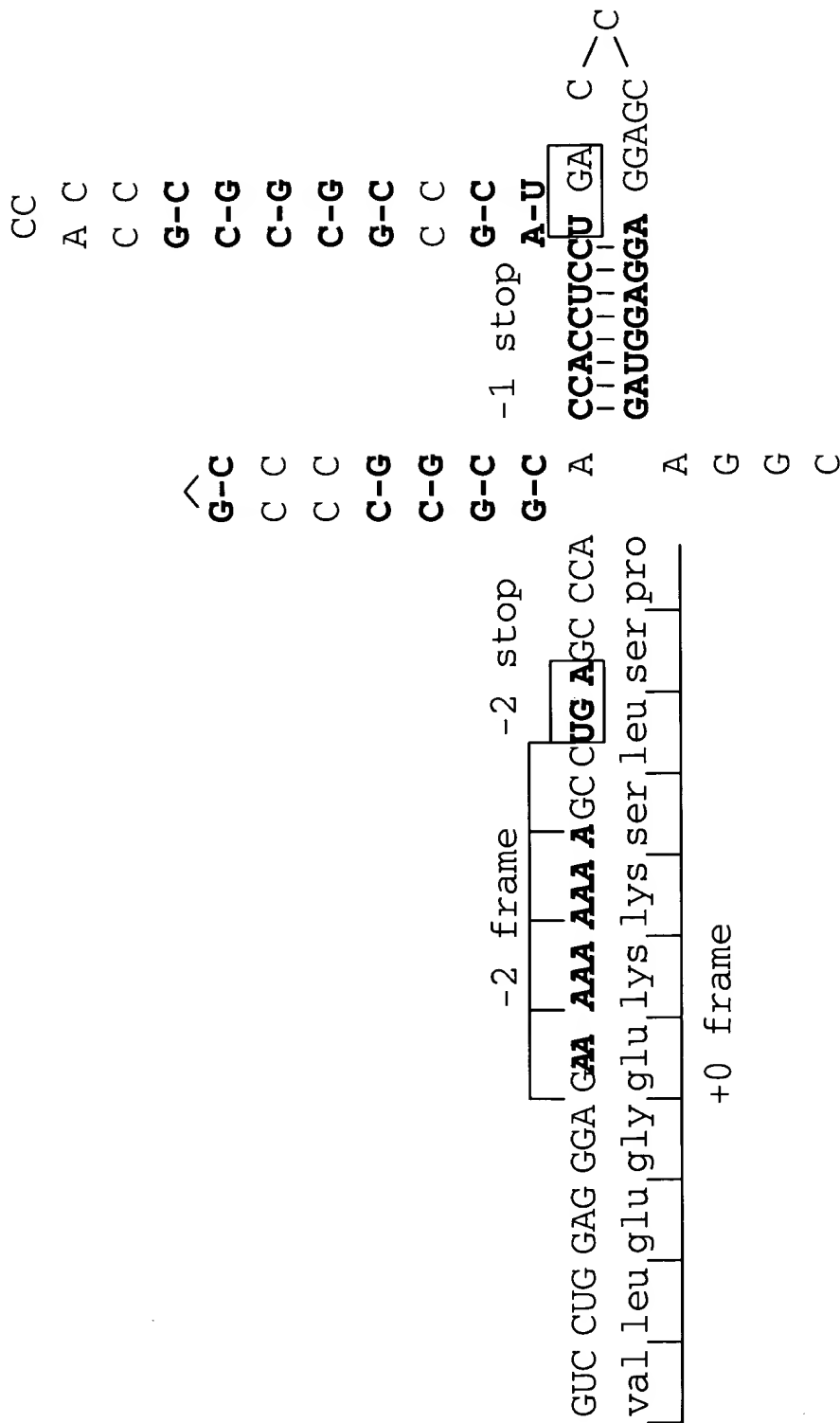


FIG. 6

REPLACEMENT
SHEET

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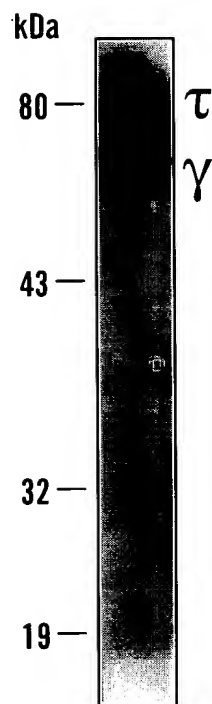


FIG. 7

REPLACEMENT SHEET

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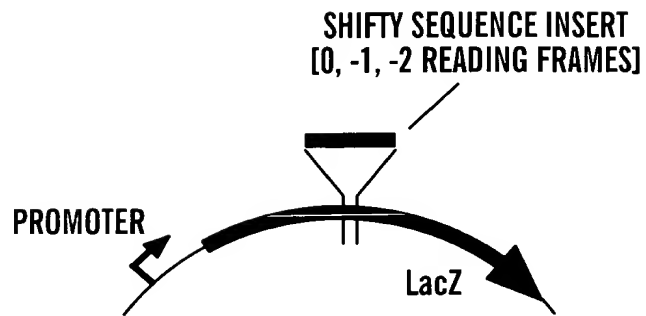


FIG. 8A

	READING FRAME	BLUE	WHITE
SHIFTY SEQUENCE	0	+	
	-1	+	
	-2	+	
MUTANT SEQUENCE	0	++	
	-1		+
	-2		+

FIG. 8B

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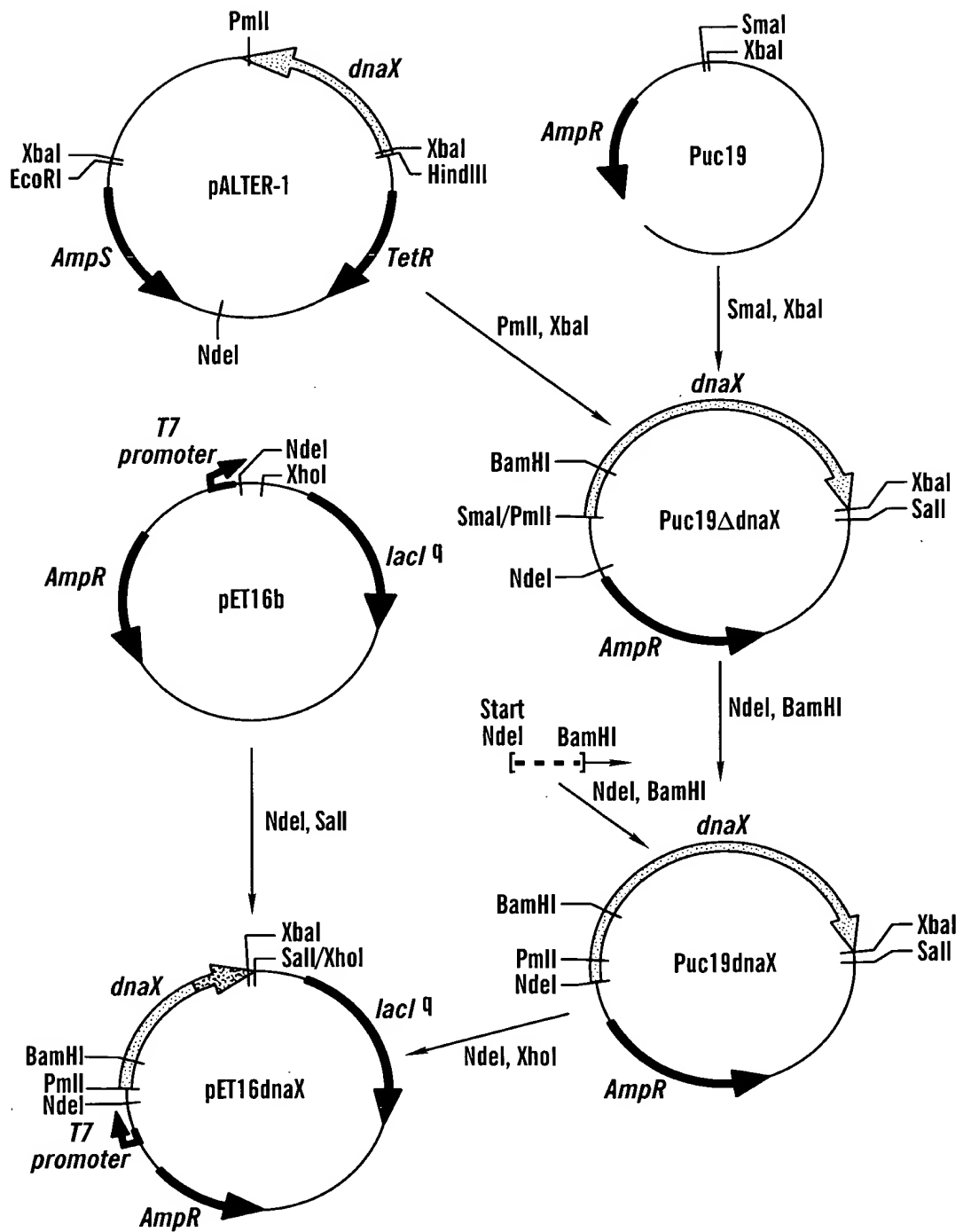
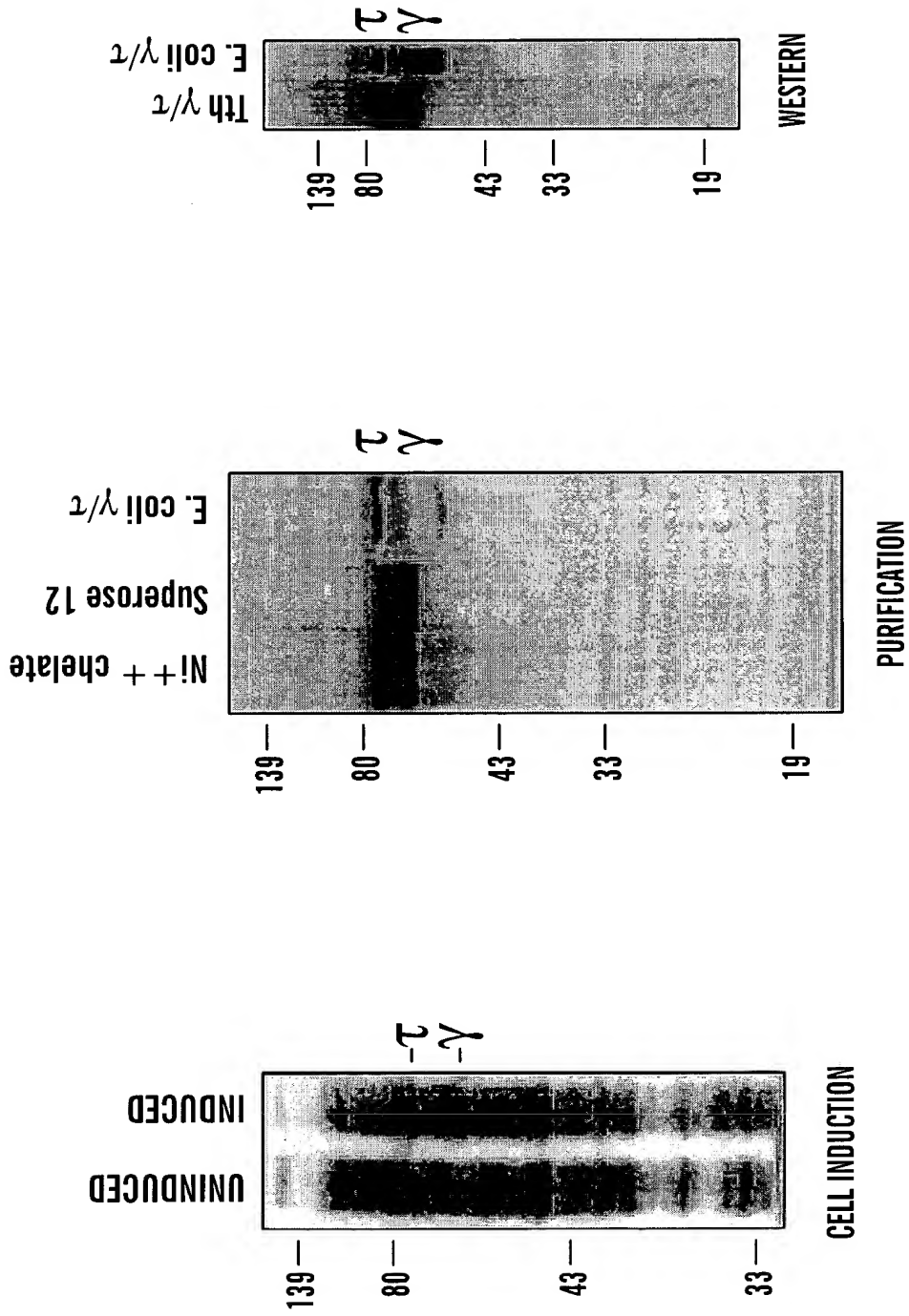


FIG. 9

REPLACEMENT
SHEET

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REPLACEMENT
SHEET

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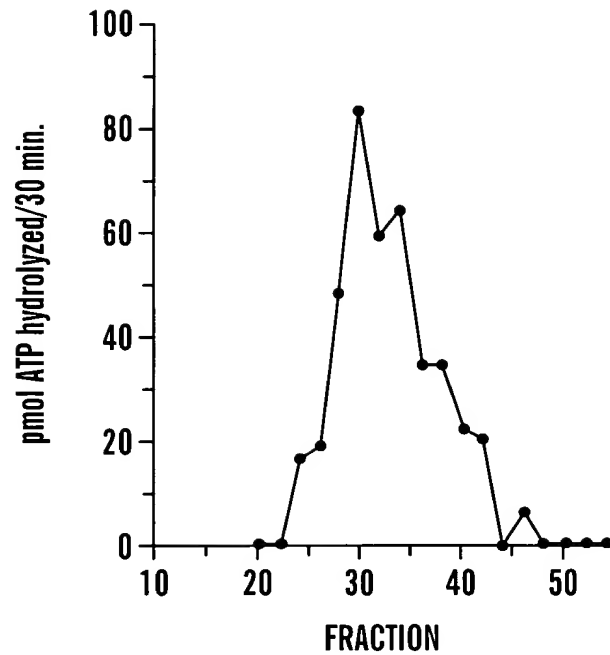


FIG. 11A

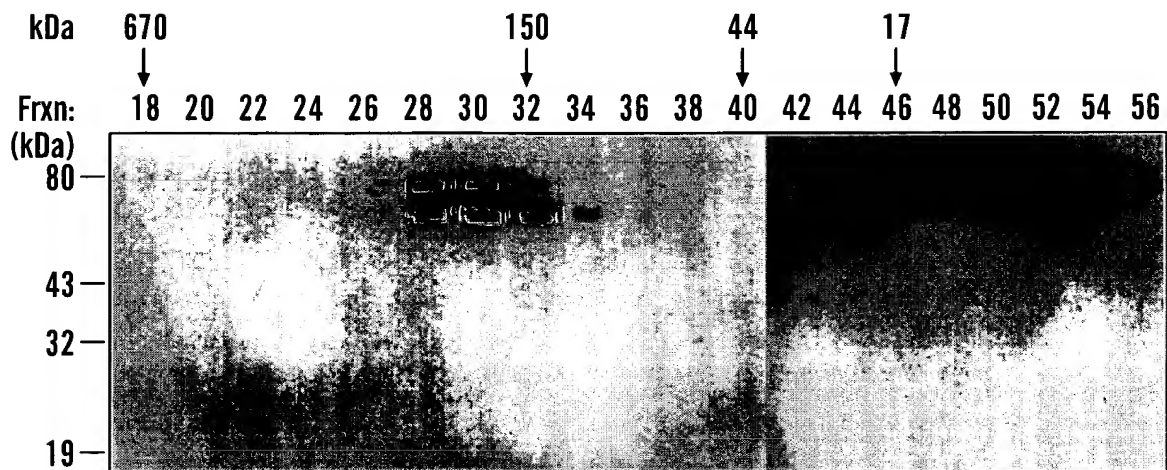


FIG. 11B

REPLACEMENT SHEET

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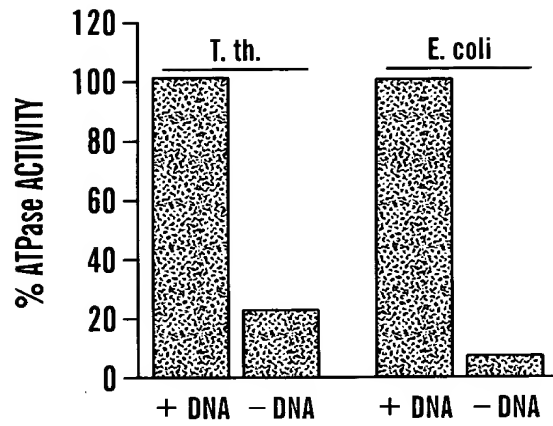


FIG. 12A

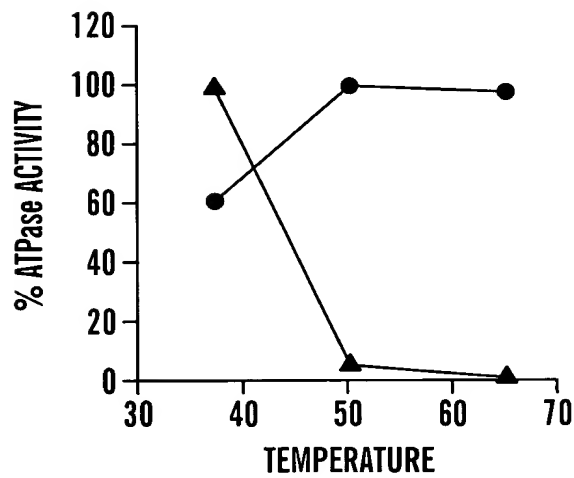


FIG. 12B

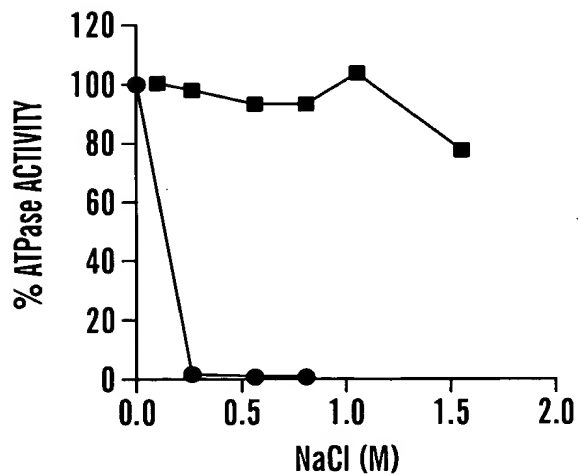


FIG. 12C

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FIG. 13A

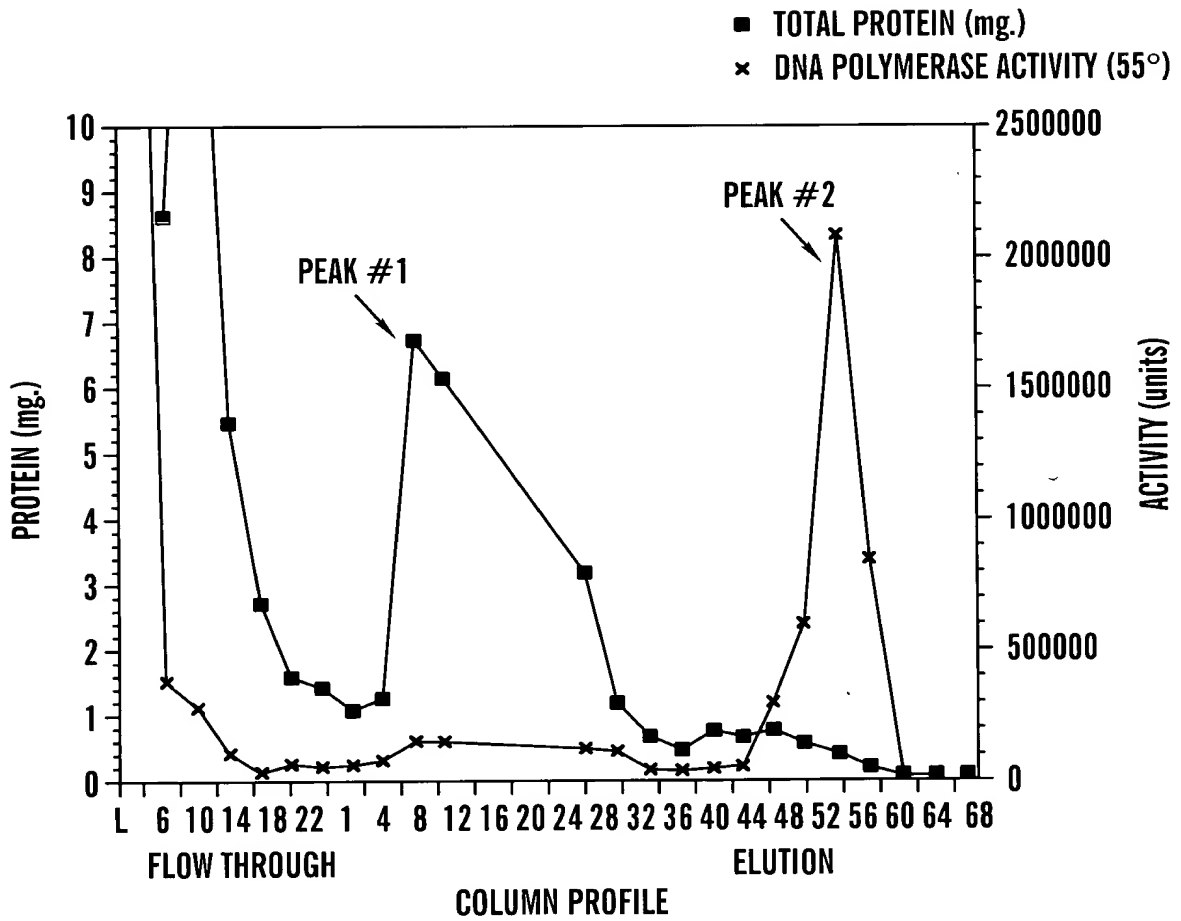


FIG. 13B

ATP AGAROSE STEP COLUMN

REPLACEMENT SHEET

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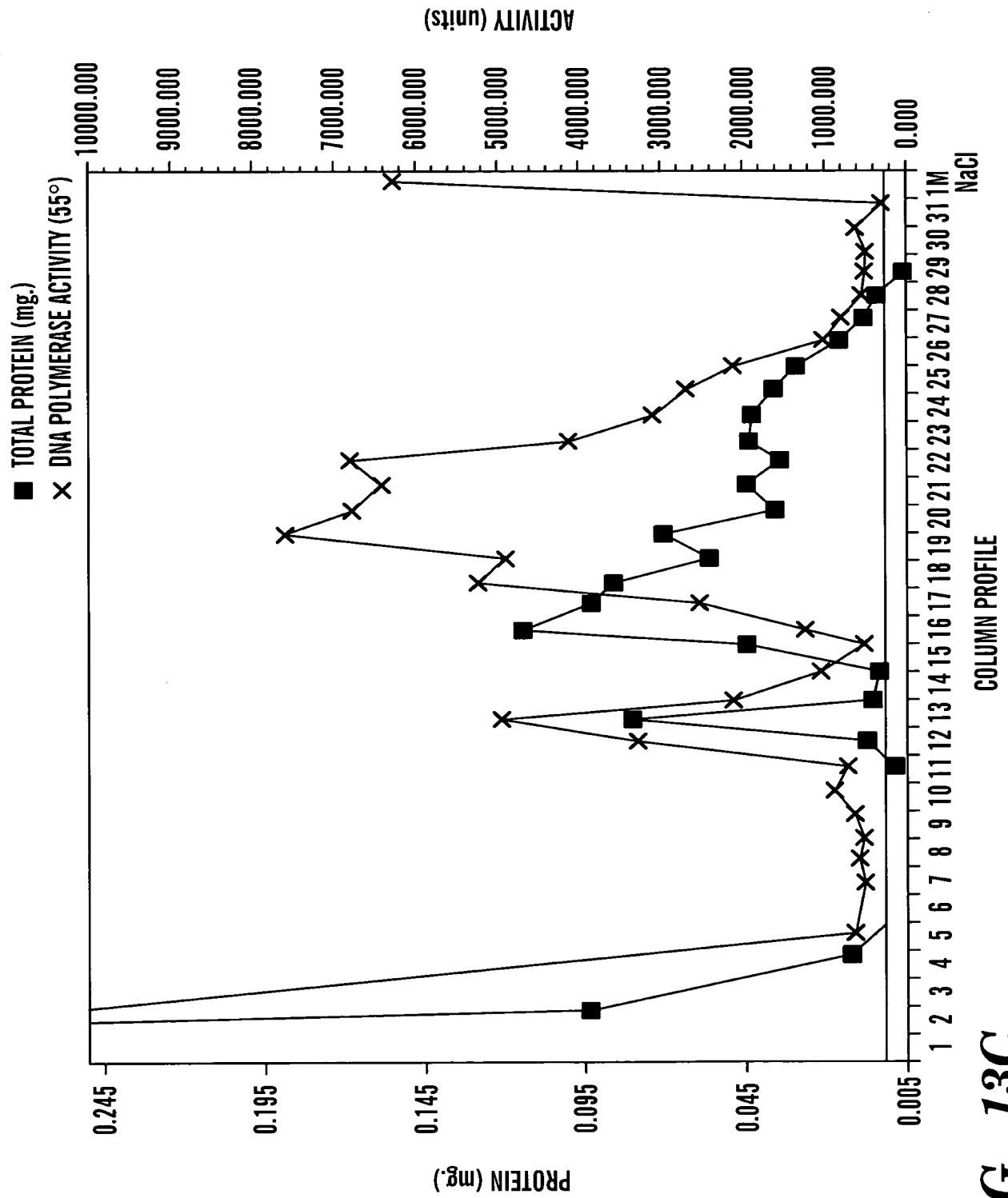


FIG. 13C

REPLACEMENT
SHEET

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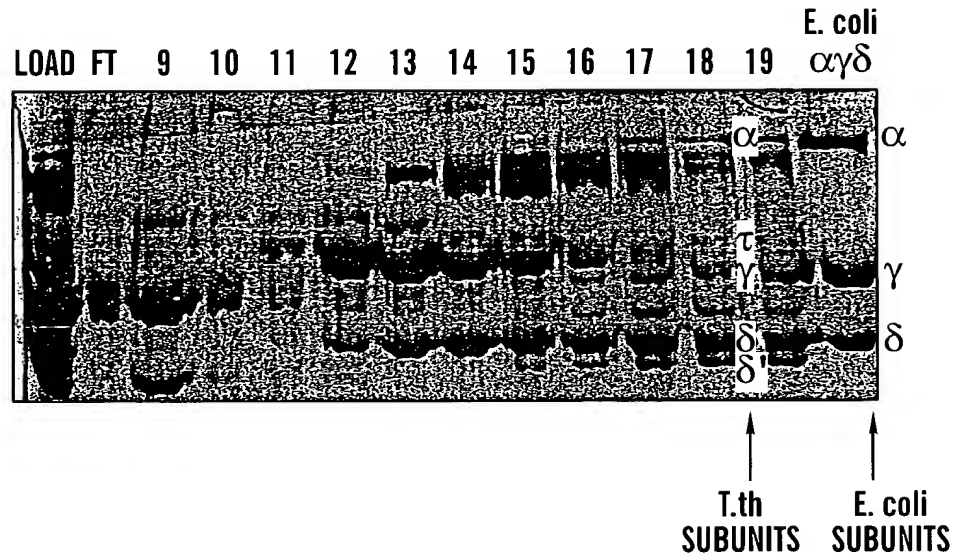


FIG. 14A

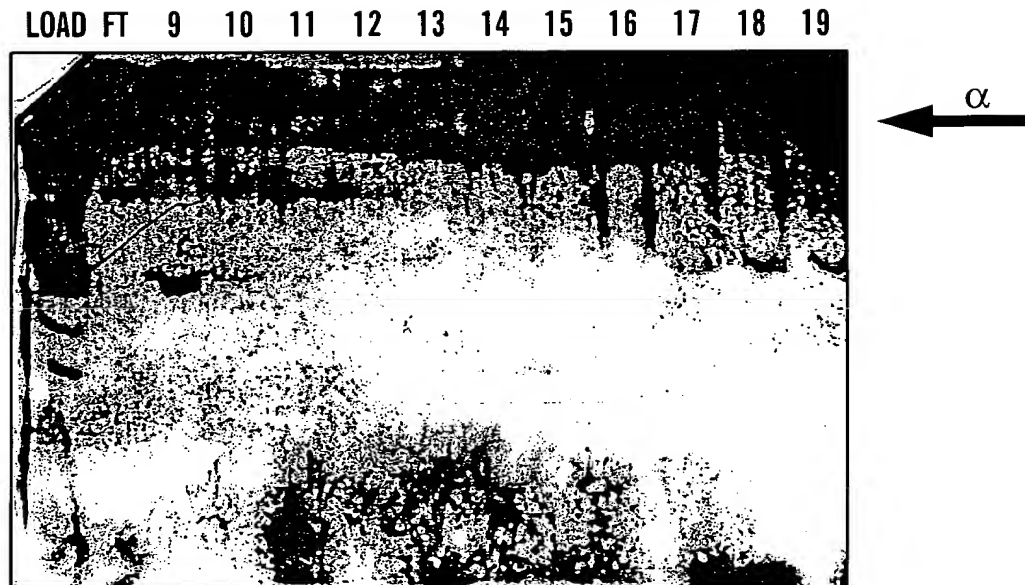


FIG. 14B

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Alignment of TTH1 with alphas subunits of other organisms.

E.coli	DRYFLELIRTGRPDEESYLHAAVELAEARGLPVV	197	(ID#72)
V.chol.	DHFYLELIRTGRADEESYLHFALDVAEQYDLPVV	197	(ID#73)
H.inf.	DHFYALASRTGRPNEERYIQAAALKLAERCDDLPLV	197	(ID#74)
R.prow.	DRFYFEIMRHDLPREEQFIENSYIQIASELSIPIV	195	(ID#75)
H.pyl.	DDFYLEIMRHGILDQRFIDEQVIKMSLETGLKII	213	(ID#76)
S.sp.	DDYYLEIQDHGSVEDRLVNINLVKIAQELDIKIV	202	(ID#77)
M.tub.	DNYFLELMDHGLTIERRVRDGLLEIGRALNIPPL	220	(ID#78)
T.th.	FFIEIQNHGLSEQK		(ID#61)

FIG. 15A

Alignment of TTH2 with alphas subunits of other organisms.

E.coli	NKRRAKNGEPPLDIAAIPLDDKKSFDMLQRSETTAVFQLESRGMKD	618	(ID#79)
V.chol.	NPRLKKAGKPPVRIEAIPLDDARSFRNLQDAKTTAVFQLESRGMKD	618	(ID#80)
H.inf.	NVRMVREGKPRVDIAAIPLDDPESFELLKRSETTAVFQLESRGMKD	618	(ID#81)
R.prow.	CKLLKEQGIKIDFDDMTFDDKKTYQMLCKGKGVGVFQFESIGMKD	624	(ID#82)
H.pyl.	LKIIKTQHKISVDFLSLDMDDPKVYKTIQSGDTVGFQIES-GMFQ	648	(ID#83)
S.sp.	QERKALQIRARTGSKKLPDDVKKTHKLLLEAGDLEGFQLESQGMKQ	643	(ID#84)
M.tub.	IDNVRANRGIDLDESVPPLDDKATYELLGRGDTLGVFQLDGGPMRD	646	(ID#85)
T.th.	RVELDYDALTLDD		(ID#60)

FIG. 15B

REPLACEMENT SHEET

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ATGGGCCGGGAGCTCCGCTTCGCCCACCTCCACCAGCACA	
CCCAGTTCTCCCTCCTGGACGGGGCGGCGAAGCTTTCCGA	
CCTCCTCAAGTGGGTCAAGGAGACGACCCCCGAGGACCCC	120
GCCTTGGCCATGACCGACCACGGCAACCTCTTCGGGGCCG	
TGGAGTTCTACAAGAAGGCCACCGAAATGGGCATCAAGCC	
CATCCTGGGCTACGAGGCCTACGTGGCGGCGGAAAGCCGC	240
TTTGACCGCAAGCGGGGAAAGGGCCTAGACGGGGGCTACT	
TTACCTCACCTCCTCGCCAAGGACTTCACGGGGTACCA	
GAACCTGGTGCGCCTGGCGAGCCGGGCTTACCTGGAGGGG	360
TTTTACGAAAAGCCCCGGATTGACCGGGAGATCCTGCGCG	
AGCACGCCGAGGGCCTCATCGCCCTCTCGGGGTGCCTCGG	
GGCGGAGATCCCCCAGTTCATCCTCCAGGACCGTCTGGAC	480
CTGGCCGAGGCCCCGGCTCAACGAGTACCTCTCCATCTTCA	
AGGACCGCTTCTTCATCGAGATCCAGAACCACGGCCTCCC	
CGAGCAGAAAAAGGTCAACGAGGTCTCAAGGAGTTGCCC	600
CGAAAGTACGGCCTGGGGATGGTGGCCACCAACGACGGCC	
ATTACGTGAGGAAGGAGGACGCCCCGCGCCACGAGGTCCT	
CCTCGCCATCCAGTCCAAGAGCACCTGGACGACCCCGGG	720
CGCTGGCGCTTCCCCTGCGACGAGTTCTACGTGAAGACCC	
CCGAGGAGATGCGGGCCATGTTCCCCGAGGAGGAGTGGGG	
GGACGAGCCCTTTGACAACACCGTGGAGATCGCCCGCATG	840
TGCAACGTGGAGCTGCCCATCGGGGACAAGATGGTCTACC	
GAATCCCCCGCTTCCCCCTCCCCGAGGGGCGGACCGAGGC	
CCAGTACCTCATGGAGCTCACCTTCAAGGGGCTCCTCCGC	960
CGTACCCCGGACCGGATCACCGAGGGCTTCTACCGGGAGG	
TCTTCCGCCTTTTGGGGAAGCTTCCCCCCCCACGGGGACGG	
GGAGGCCTTGGCCGAGGCCTTGGCCCAGGTGGAGCGGGAG	1080
GCTTGGGAGAGGCTCATGAAGAGCCTCCCCCCTTTGGCCG	
GGGTCAAGGAGTGGACGGCGGAGGCCATTTTCCACCGGGC	
CCTTTACGAGCTTTCCGTGATAGAGCGCATGGGGTTTCCC	1200
GGCTACTTCCTCATCGTCCAGGACTACATCAACTGGGCCC	
GGAGAAACGGCGTCTCCGTGGGGCCCCGGCAGGGGGAGCGC	
CGCCGGGAGCCTGGTGGCCTACGCCGTGGGGATCACCAAC	1320
ATTGACCCCCCTCCGCTTCGGCCTCCTCTTTGAGCGCTTCC	
TGAACCCGGAGAGGGTCTCCATGCCCGACATTGACACGGA	
CTTCTCCGACCGGGAGCGGGACCGGGTGATCCAGTACGTG	1440
CGGGAGCGCTACGGCGAGGACAAGGTGGCCCAGATCGGCA	
CCCTGGGAAGCCTCGCCTCCAAGGCCGCCCTCAAGGACGT	
GGCCCGGGTCTACGGCATCCCCACAAGAAGGCGGAGGAA	1560
TTGGCCAAGCTCATCCCGGTGCAGTTCGGGAAGCCCAAGC	
CCCTGCAGGAGGCCATCCAGGTGGTGC CGGAGCTTAGGGC	
GGAGATGGAGAAGGACCCCAAGGTGCGGGAGGTCTTCGAG	1680
GTGGCCATGCGCCTGGAGGGCCTGAACCGCCACGCCTCCG	
TCCACGCCGCCGGGGTGGTGATCGCCGCCGAGCCCCCTCAC	
GGACCTCGTCCCCCTCATGCGCGACCAGGAAGGGCGGCCC	1800
GTCACCCAGTACGACATGGGGGCGGTGGAGGCCTTGGGGC	
TTTTGAAGATGGACTTTTTTGGGCCTCCGCACCCTCACCTT	

FIG. 16A

REPLACEMENT SHEET

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CCTGGACGAGGTCAAGCGCATCGTCAAGGCGTCCCAGGGG	1920
GTGGAGCTGGACTACGATGCCCTCCCCCTGGACGACCCCA	
AGACCTTCGCCCTCCTCTCCCGGGGGGAGACCAAGGGGGT	
CTTCCAGCTGGAGTCGGGGGGGATGACCGCCACGCTCCGC	2040
GGCCTCAAGCCGCGGCGCTTTGAGGACCTGATCGCCATCC	
TCTCCCTCTACCGCCCCGGGCCCCATGGAGCACATCCCCAC	
CTACATCCGCCGCCACCACGGGCTGGAGCCCGTGAGCTAC	2160
AGCGAGTTTCCCCACGCCGAGAAGTACCTAAAGCCCATCC	
TGGACGAGACCTACGGCATCCCCGTCTACCAGGAGCAGAT	
CATGCAGATCGCCTCGGCCGTGGCGGGGTACTCCCTGGGC	2280
GAGGCGGACCTCCTGCGGCGGTCCATGGGCAAGAAGAAGG	
TGGAGGAGATGAAGTCCCACCGGGAGCGCTTCGTCCAGGG	
GGCCAAGGAAAGGGGCGTGCCCGAGGAGGAGGCCAACC GC	2400
CTCTTTGACATGCTGGAGGCCCTTCGCCAACTACGGCTTCA	
ACAAATCCCACGCTGCCGCCTACAGCCTCCTCTCCTACCA	
GACCGCCTACGTGAAGGCCCACTACCCCGTGGAGTTCATG	2520
GCCGCCCTCCTCTCCGTGGAGCGGCACGACTCCGACAAGG	
TGGCCGAGTACATCCGCGACGCCCGGGCCATGGGCATAGA	
GGTCCTTCCCCCGGACGTCAACCGCTCCGGGTTTGACTTC	2640
CTGGTCCAGGGCCCGGCAGATCCTTTTCGGCCTCTCCGCGG	
TGAAGAACGTGGGCGAGGCGGCGGCGGAGGCCATTCTCCG	
GGAGCGGGAGCGGGGCGGCCCTACCGGAGCCTCGGCGAC	2760
TTCTCAAGCGGCTGGACGAGAAGGTGCTCAACAAGCGGA	
CCCTGGAGTCCCTCATCAAGGCGGGCGCCCTGGACGGCTT	
CGGGGAAAGGGCGCGGCTCCTCGCCTCCCTGGAAGGGCTC	2880
CTCAAGTGGGCGGCCGAGAACC GGGAGAAGGCCCGCTCGG	
GCATGATGGGCCTCTTCAGCGAAGTGAGGAGCCGCCTTT	
GGCCGAGGCCGCCCCCTGGACGAGATCACCCGGCTCCGC	3000
TACGAGAAGGAGGCCCTGGGGATCTACGTCTCCGGCCACC	
CCATCTTGCGGTACCCCGGGCTCCGGGAGACGGCCACCTG	
CACCTTGAGGAGCTTCCCCACCTGGCCCGGGACCTGCCG	3120
CCCCGGTCTAGGGTCCTCCTTGCCGGGATGGTGGAGGAGG	
TGGTGC GCAAGCCCACAAAGAGCGGCGGGATGATGGCCCG	
CTTCGTCTCTCCGACGAGACGGGGGCGCTTGAGGCGGTG	3240
GCATTGCGCCGGGCCTACGACCAGGTCTCCCCGAGGCTCA	
AGGAGGACACCCCCGTGCTCGTCCTCGCCGAGGTGGAGCG	
GGAGGAGGGGGGCGTGCGGGTGCTGGCCCAGGCCGTTTGG	3360
ACCTACGAGGAGCTGGAGCAGGTCCCCCGGGCCCTCGAGG	
TGGAGGTGGAGGCCTCCCTCCTGGACGACCGGGGGGTGGC	
CCACCTGAAAAGCCTCCTGGACGAGCACGCGGGGACCCTC	3480
CCCCTGTACGTCCGGGTCCAGGGCGCCTTCGGCGAGGCCC	
TCCTCGCCCTGAGGGAGGTGCGGGTG GGGGAGGAGGCTGT	
AGGCGGCCGCGTGGTTCCGGGCCTACCTCCTGCCCGACCG	3600
GGAGGTCCCTTCTCCAGGGCGGCCAGGCGGGGGAGGCCAG	
GAGGCGGTGCCCTTCTAGGGGGTGGGCCGTGAGACCTAGC	
GCCATCGTTCTCGCCGGGGGCAAGGAGGCCTGGGCCCGAC	3720
CCCTTTTGG	

FIG. 16B

REPLACEMENT SHEET

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MGRELRF AHLHQHTQFSLLDGAPKLSDLLKWVEETTPEDP	
ALAMTDHGNLFGAVEFYKKATEMGIKPILGYEAYVAAESR	
FDRKRGKGLDGGYFHLTLLAKDFTGYQNLVRLASRAYLEG	120
FYEKPRIDREILREHAEGLI ALSGCLGAEIPQFILQDRLD	
LAEARLNEYLSIFKDRFFIEIQNHGLPEQKKVNEVLKEFA	
RKYGLGMVATNDGHYVRKEDARAHEVLLAIQSKSTLDDPG	240
ALALPCEEFYVKTPEEMRAMFPEEEVGGRSPLTTPWRSPH	
VORGAAIGTRWSTRIPRFPLPEGRTEAQYLMELTFKGLLR	
RYPDRITEGFYREVFRLSGKLPPHGDGEALAEALAQVERE	360
AWERLMKSLPPLAGVKEWTAEAIFHRALYELSAIERMGFP	
GLLPHRPGLHQLGPEKGVSVGPGRGGAAGSLVAYAVGITN	
IDPLRFGLL FERFLNPERVSMPDIDTDFSDRERDRVIQYV	480
RERYGEDKVAQIGTLGSLASKAALKEVARVYGI PRKKAEE	
LAKLIPVQFGKPKPLQEAIQVVPPELRAEMEKDPKVREVLE	
VAMRLEGLNRHASVHAGRGGVFSEPLTDLVPLCATRKGGP	600
YTQYDMGAVEALGLLKMDFLGLRRTLFLDEVKRIVKASQG	
VELDYDALPLDDPKTFALLSRGETKGVFQLESGGMTATLR	
GLKPRRFEDLIAILSLYRPGPMEHIPTYIRRHHGLEPVSY	720
SEFPHA EKYLKPILDETYGIPVYQEQIMQIASAVAGYSLG	
EADLLRRSMGKKKVEEMKSHRERFVQAKERGVPEEEANR	
LFDMLEAFANYGFNKSHAAAYSLLSYQTAYVKAHYPVEFM	840
AALLSVERHDS DKVAEYIRDARAMGIEVLPPDVNRSGFDF	
LVQGRQILFGLSAVKNVGEAAAEAILRERERGGPYRSLGD	
FLKRLDEKVLNKR TLESLIKAGALDGFGERARLLASLEGL	960
LKWAAENREKARSGMMGLFSEVEEPPLAEAAPLDEITRLR	
YEKEALGIYVSGHPILRYPGLRETATCTLEELPHLARDLP	
PRSRVLLAGMVEEVVRKPTKSGGMMARFVLSDETGALEAV	1080
AFGRAYDQVSPRLKEDTPVLVLAEVEREEGGVRVLAQAVW	
TYQELEQVPRALEVEVEASLPDDRGV AHLKSLLDEHAGTL	
PLYVRVQGA FGEALLALREVRVGEEALGALEAAGFPAYLL	1200
PNREVSPRLTGSGGPRGRALSTGLALKTYPIALPGGNEAL	
ARPLL	

FIG. 16C

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	Start1	Start2	3'-Exo I
T.th.	VERVVRTLLDGRFLLEEGVGLWEWRYPPFLEGEAVVVLDDLETTGLAG-----LDEVIEVGLLRLEGG---RRLPF		
D.rad.		PWPQDVVVFDDLETTGFSPA-----SAAIVEIGAVRIVGGQIDETLKF	
Bac.sub.	HGIKMIYGM EANLVDDGVPIAYNA AHRLLLEEETVVVFDVETTGLSAV-----YDTIIELAAVKVKGGE---IIDKF		
H.inf.		MINPNRQIVLDTETTTGMNQGAHYEGHCHIIIEIGAVELINRR-YTGNNX	
E.c.		MSTAITRQIVLDTETTTGMNQIGAHSEGHKIIIEIGAVEVVNRR-LTGNNF	
H.pyl.	NLEYLKACGLNFIETSENLTITLKNLKTPLKDEVFSFIDLETTGSCPI-----KHEILEIGAVQVKGGE---IINRF		
			3'-Exo II
T.th.	QSLVR-PLPP---AEARSWNLT---GIPREAL EEAPSL EEVL EKAYPLRGDATLVIHNAAFDLGFL-RPALEGLG		
D.rad.	ETLVR-PTRPDGSML SIPWQAQRVHGISDEMVRRAPAKKDVLPDFFDFVDGS AVVAHNVSFDGGFM-RAGAERLG		
Bac.sub.	EAFAN-PHRP---LSATIIELT---GITDDMLQDAPDVVDVIRDFREWIGDDILVAHNASFDMGFL-NVAYKKLL		
H.inf.	HIYIK-PDRP---XDPDAIKVH---GITDEMLADKPEFKEVAQDFLDYINGAELLIHNAFPDVGFM-DYEFKRLN		
E.c.	HVYLK-DRLV---DPEAFGVH---GIAVDFLLDKPTFAEVAVEFMDYIRGAELVIHNAAFDIGFM-DYEFSLLK		
H.pyl.	ETLVKVKSV P-----DYIAELT---GITYEDTLNAPS AHEALQELRLFLGNSV FVAHNANFDYNF LGRYFVEKLLH		
			3'-Exo IIIC
T.th.	-----YRLENPVVDSLRLARRGLPGLRRYGLDALSEVLELPRRT--CHRALEDVERTLAVVHVHYMLT-----SG		
D.rad.	-----LSWAPERELCTMQLSRRAPFRERTHNLTVLAERLGLFAPGGRHRSYGDVQVTAQAYLRLLLELLG-----ER		
Bac.sub.	E-----VEKAKNPVIDTLELGRFLYPEFKNHRLNLTCLKKFDIELTQ--HHRAIYDTTEATAYLLLKMLKDA-----EK		
H.inf.	-LNVKTDDICLVTDTLQMARQMYPGKRN-NLDALCDRLGIDNSKRTLHGALLDAEILADVILMMTGGQTNLFDDEEE		
E.c.	RDI AKTNTFCVKVTD SLAVARKMFP GKRN-SLDALCARYEIDNSKRTLHGALLDAQILA EVYLAMTGGQTSMAFAME		
H.pyl.	-----CPLLNLKCLTLDLSKRAILSMRY-SLSFLKELLGFGIEV--SHRAYADALASYKLFELCLLNP--SYIKT		

FIG. 17

REPLACEMENT SHEET

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ATGGTGGAGCGGGTGGTGCGGACCCTTCTGGACGGGAGGT 40
TCCTCCTGGAGGAGGGGGTGGGGCTTTGGGAGTGGCGCTA
CCCCTTTCCCCCTGGAGGGGGGAGGCGGTGGTGGTCCTGGAC 120
CTGGAGACCACGGGGCTTGCCGGCCTGGACGAGGTGATTG
AGGTGGGCCTCCTCCGCCTGGAGGGGGGGAGGCGCCTCCC 200
CTTCCAGAGCCTCGTCCGGCCCCCTCCCGCCCCGCCGAAGCC
CGTTCGTGGAACCTCACCGGCATCCCCCGGGAGGCCCTGG 280
AGGAGGCCCCCTCCCTGGAGGAGGTTCTGGAGAAGGCCTA
CCCCCTCCGCGGCGACGCCACCTTGGTGATCCACAACGCC 360
GCCTTTGACCTGGGCTTCCTCCGCCCCGGCCTTGGAGGGCC
TGGGCTACCGCCTGGAAAACCCCGTGGTGGACTCCCTGCG 440
CTTGGCCAGACGGGGCTTACCAGGCCTTAGGCGCTACGGC
CTGGACGCCCTCTCCGAGGTCCTGGAGCTTCCCCGAAGGA 520
CCTGCCACCGGGCCCTCGAGGACGTGGAGCGCACCCCTCGC
CGTGGTGCACGAGGTATACTATATGCTTACGTCCGGCCGT 600
CCCCGCACGCTTTGGGAACCTCGGGAGGTAG

FIG. 18A

MVERVVRTLLEDGRFLLEEGVGLWEWRYPFPLEGEAVVLD 40
LETTGLAGLDEVIEVGLLRLEGGRRLPFQSLVRPLPPAEA
RSWNLTGIPREALLEEAPSLEEVLEKAYPLRGDATLVIHNA 120
AFDLGFLRPALEGLGYRLENPVVDSLRLARRGLPGLRRYG
LDALSEVLELPRRTCHRALEDVERTLAVVHEVYYMLTSGR 200
PRTLWELGRZ

FIG. 18B

REPLACEMENT SHEET

Alignment of dnaA genes.

P.mar.	MLEASWEK	VQSSL--KQNLK--	-----PSYE	TWIRPTEFG--FKN	GELTLIAPNSFSSAW	LKNYSQTIQETAE-	65
Syn.sp.	MVSCENLWQQ	ALAIL--ATQLTK--	-----PAFD	TWIKASVLIS--LGD	GVATIQVENGFVLNH	LQSYGPLLMEVLT-	67
B.sut.	MENILDWLNQ	ALAQI--EKLSK--	-----PSFE	TWMKSTKAHS--LQG	DTLTITAPNEFARDW	LESRYLHLIADTIY-	67
M.tub.	MTDDPGSGFTTVWNA	VVSELNGDPKVDGDP	SSDANLSAPLTPQQR	AWNLVQPLT--IVE	GFALLSVPSFVQNE	IERHLRAPITDALS-	87
T.th.	MSHEAVWQH	VLEHI--RRSITE--	-----VEFH	TWFERIRPLG--IRD	GVLELAVPTSFALDW	IRRHVAGLIQEGPR-	66
E.coli	MSLSLWQQ	CLARL--QDELPA--	-----TEFS	MWIRPLQAE--LSD	NTLALYAPNRFVLDW	VRDKYLNININGLLT-	64
T.mar.	MKER	ILQEI--KTRVNR--	-----KSWE	LWFSFDVKS--IEG	NKVVSFVGNLFIKEW	LEKKYYSVLSKAVK-	61
H.pyl.	MDTNNNIEKE	ILALVKQNPKVSL--	-----IEYE	NYFSQLKYNPNASKS	DIAFFYAPNQVLCTT	ITAKYGALLKEILSQ	72
P.mar.	EIFG---EPVTVHVK	VKANAESSDEHYSSA	P-----	---ITPPLEASPGSV	DSSGSSLRLSK---	-KTLPLLLNLRVVFNR	130
Syn.sp.	DLTG---QEITVKLI	TDGLEPHS---LIGQ	E-----	---SSLPMETTP	-----	-KNATALNGKYTFSR	115
B.sut.	ELTG---EELSIFV	IPQNQDVEDFMPKPQ	VKKAVKEDTSDFPQN	-----	-----	-----MLNPKYTFDT	119
M.tub.	RRLGH-QIQLGVRIA	PPATDEADDTTVPPS	ENPATTSPTTTDND	EIDDSAAARGDNQHS	WPSYFTERPHNTDSA	TAGVTSLNRRYTFDT	176
T.th.	LLGAQ-APRFELRV	PGVVVEDIFQPPPS	PPAQAP-----	-----	-----	-----EDTFKT	108
E.coli	SFCGADAPQLRFEVG	TKPVTQTPQAAVTSN	VAAPAQVAQTQPORA	APSTRSGWDNVPA	EP-----	-TYRSNVNVKHTFDN	140
T.mar.	VVLG---NDATFEIT	YEAFEPHSSYSEPLV	KKRAVLLTP-----	-----	-----	-----LNPDTTFEN	106
H.pyl.	NKVG-MHLAHSVDVR	IEVAPKIQINAQSN	NYKAIKTS-----	-----	-----	-----VKDSYTFEN	118
P.mar.	FVVGNPSRMAHAAAM	AVAESPGREFNPFLFI	CGGVGLGKTHLMQAI	GHYRLEIDPGAKVSY	VSTETFTNDLIL--A	IRQDRMQAFRDRYR-	217
Syn.sp.	FVVGPTNRMHAAASL	AVAESPGREFNPFLFL	CGGVGLGKTHLMQAI	AHYRLEMYPNAKVY	VSTERFTNDLIT--A	IRQDNMEDFRSYR-	202
B.sut.	FVIGSGNRFHAAASL	AVAEAPAKAYNPFLFI	YGGVGLGKTHLMHAI	GHYVIDHNPSAKVY	LSSEKFTNEFIN--S	IRDNKAVDFRNRYR-	206
M.tub.	FVIGASNRFHAAAL	AIAEAPARAYNPFLFI	WGESGLGKTHLLHAA	GNYAQRLFPGRMVKY	VSTEEFTNDFIN--S	LRDDRKVAFKRSYR-	263
T.th.	SWWGP'TTPWPHGGAV	AVAESPGRAYNPFLFI	YGGRLGKTYLMHAV	GPLRAKRFPHMRLEY	VSTETFTNELINRPS	AR-DRMTEFRERYR-	196
E.coli	FVEGKSNQLARAAAR	QVADNPGGAYNPFLFL	YGGTGLGKTHLLHAV	NGGIMARKPNKVVY	MHSERFVQDMVK--A	LQNNAIIEEFKRYR-	227
T.mar.	FVVGPNGSFAYHAAL	EVAKHPGR--YNPFLFI	YGGVGLGKTHLLQSI	GNVYVQNEPDLRVMY	ITSEKFLNDLVD--S	MKEGKLNFEFREKYRK	193
H.pyl.	FVVGSCNNTVYEIAK	KVAQSDTPPPYNPVL	YGGTGLGKTHILNAI	GNHALEK--HKKVVL	VTSEDFLTDFLK--H	LDNKTMDSFKAKYR-	203

FIG. 19A

P.mar.	AADLILVDDIQFIEG	KEYTQEEFFHTFNAL	HDAGSQIVLASDRPP	SQIPRLQERLMSRFS	MGLIADVQAPDLETR	MAILQKKAHERVGL	307
Syn.sp.	SADFLILDDIQFIKG	KEYTQEEFFHTFNAL	HEAGKQVVASDRAP	QRIPGLQDRLISRFS	MGLIADIQVPDLETR	MAILQKKAEDRIRL	292
B.sut.	NVDVLLIDDIQFLAG	KEQTQEEFFHTFNAL	HEESKQIVISSDRPP	KEIPTLEDRLRSRFE	WGLITDITPPDLETR	IAILRKKAKAEGLDI	296
M.tub.	DVDVLLVDDIQFIEG	KEGIQEEFFHTFNAL	HNANKQIVISSDRPP	KQLATLEDRLRTRFE	WGLITDVQPPELETR	IAILRKKQAQMERLAV	353
T.th.	SVDALLVDDVQFIAG	KERTQEEFFHTFNAL	YEAHKQIILSSDRPP	KDILTLEARLRSRFE	WGLITDNPAPDLETR	IAILKMNAS-SGPED	285
E.coli	SVDALLIDDIQFFAN	KERSQEEFFHTFNAL	LEGNQQIILTSDRYP	KEINGVEDRLKSRFG	WGLITVAIEPPELETR	VAILMKKADENDIRL	317
T.mar.	KVDILLIDDVQFLIG	KTGVQTELFHTFNEL	HDSGKQIVICSDREP	QKLSEFQDRLVSRFQ	MGLVAKLEPPDEETR	KSIARKMLEIEHGEL	283
H.pyl.	HCDFLLDDAQFLQG	KPKLEEEFFHTFNEL	HANSKQIVLISDRSP	KNIAGLEDRLKSRFE	WGITAKVMPDLETK	LSIVKQKCQLNQITL	293
P.mar.	PRDLIQFIAGRFTSN	IRELEGALTRAIAFA	SITGLPMTVDSIAPM	LD-----PNGQGVEVT	PKQVLDKVAEVFKVT	PDEMRSASRRR-PVS	392
Syn.sp.	PKEVIEYIASHYTSN	IRELEGALIRAIAYT	SLSNVAMTVENIAPV	LN-----PPVEKVAAA	PETIITIVAQHYQLK	VEELLSNSRRR-EVS	377
B.sut.	PNEVMLYIANQIDSN	IREGALIRVWAYS	SLINKDINADLAAEA	LKDII-PSSKPKVIT	IKEIQRVVGQQFNK	LEDFKAKKRTK-SVA	384
M.tub.	PDDVLELIAASSIERN	IREGALIRVTAFAT	SLNKTPIDKALAEIV	LRDLI-ADANTMQIS	AATIMAAATAEYFDTT	VEELRGPGKTR-ALA	441
T.th.	PEDALEYIARQVTSN	IREWEGALMRASPFA	SLNGVELTRAVAAKA	LRHLR-P--RELEAD	PLEIIRKKAAGPVRPE	TPGGAHGERRKKEVV	372
E.coli	PGEVAFFFIAKRLRSN	VRELEGALNRVIANA	NFTGRAITIDFVREA	LRDLL-A-LQEKLV	IDNIQKTVAEYKIK	VADLLSKRRSR-SVA	404
T.mar.	PEEVNLFVAENVDDN	LRRLRGAIILKLVYK	ETTGKEVDLKEAILL	LKDFIKPNRVKAMDP	IDELIETIVAKVTGVP	REEILSNSRNV-KAL	372
H.pyl.	PEEVMEYIAQHISDN	IRQMEGAIIKISVNA	NLMNASIDLNLAKTV	LEDL--QKDHAEAGSS	LENILLAVAQSLNLK	SSEIKVSSRQK-NVA	380
P.mar.	QARQVGMVLMRQGTN	LSLPRIGDTFGGKDH	TTVMYAIEQVEKKLS	S-----DPQIA	SQVQKIRDLLQIDSR	RKR----	461
Syn.sp.	LARQVGMVLMRQHTD	LSLPRIGEAFGGKDH	TTVMYSCDKITQLQQ	K-----DWETS	QTLTSLSHRINIAGQ	APES----	447
B.sut.	FPRQIAMVLSREMTD	SSLPKIGEEFGGRDH	TTVIHAHEKISKLLA	D-----DEQLQ	QHVKEIKEQLK----	-----	446
M.tub.	QSRQIAMVLCRELTD	LSLPKIGQAFG-RDH	TTVMYAQRKILSEMA	E-----RREVF	DHVKELTTRIRQRSK	R-----	507
T.th.	LPRQIAMVLVRELTP	ASLPEIGQLFGGRDH	TTVRYAIQKVQELAG	KP-----DREVQ	GLLRTLREACTDPVD	NLWITCG	446
E.coli	RPRQMAMALAKELTN	HSLPEIGDAFGGRDH	TTVLHACRKIEQLRE	E-----SHDIK	EDFSNLIRTLSS----	-----	467
T.mar.	TARRIGMVVAKNYLK	SSLRTIAEKFN-RSH	PVVVDSVKKVKDSSL	KG-----NKQLK	ALIDEVIGEISRRAL	SG-----	440
H.pyl.	LARKLVVYFARLYTP	NPTLSLAQFLDLKDH	SSISKMYSGVKKMLE	EESKSPFVLSLREEIK	NRLNELNDKKTAFNS	SE-----	457

FIG. 19B

REPLACEMENT SHEET

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GTGTCGCACGAGGCCGTCTGGCAACACGTTCTGGAGCACA
TCCGCCGCAGCATCACCGAGGTGGAGTTCACACCTGGTT
TGAAAGGATCCGCCCCCTTGGGGATCCGGGACGGGGTGCTG 120
GAGCTCGCCGTGCCACCTCCTTTGCCCTGGACTGGATCC
GGCGCCACTACGCCGGCCTCATCCAGGAGGGCCCTCGGCT
CCTCGGGGGCCAGGCGCCCCGGTTTGAGCTCCGGGTGGTG 240
CCCGGGGTCTAGTCCAGGAGGACATCTTCCAGCCCCCGC
CGAGCCCCCGGCCCAAGCTCAACCCGAAGATACCTTTAA
AACTTCGTGGTGGGGCCCAACAACCTCCATGGCCCCACGGC 360
GGCGCCGTGGCCGTGGCCGAGTCCCCCGGCCGGGCCTACA
ACCCCTCTTCATCTACGGGGGCCGTGGCCTGGGAAAGAC
CTACCTGATGCACGCCGTGGGCCCACTCCGTGCGAAGCGC 480
TTCCCCCACATGAGATTAGAGTACGTTTCCACGGAAACTT
TCACCAACGAGCTCATCAACCGGCCATCCGCGAGGGACCG
GATGACGGAGTTCCGGGAGCGGTACCGCTCCGTGGACCTC 600
CTGCTGGTGGACGACGTCCAGTTCATCGCCGGAAAGGAGC
GCACCCAGGAGGAGTTTTTCCACACCTTCAACGCCCTTTA
CGAGGCCCAACAAGCAGATCATCCTCTCCTCCGACCGGCCG 720
CCCAAGGACATCCTCACCTTGGAGGCGCGCCTGCGGAGCC
GCTTTGAGTGGGGCCTGATCACCGACAATCCAGCCCCCGA
CCTGGAAACCCGGATCGCCATCCTGAAGATGAACGCCAGC 840
AGCGGGCCTGAGGATCCCGAGGACGCCCTGGAGTACATCG
CCCGGCAGGTCACCTCCAACATCCGGGAGTGGGAAGGGGC
CCTCATGCGGGCATCGCCTTTCGCCTCCCTCAACGGCGTT 960
GAGCTGACCCGCGCCGTGGCGGCCAAGGCTCTCCGACATC
TTCGCCCCAGGGAGCTGGAGGCGGACCCCTTGGAGATCAT
CCGCAAAGCGGCGGGACCAGTTCGGCCTGAAACCCCGGGA 1080
GGAGCTCACGGGGAGCGCCGCAAGAAGGAGGTGGTCCTCC
CCCGGCAGCTCGCCATGTACCTGGTGCGGGAGCTCACCCC
GGCCTCCCTGCCCGAGATCGACCAGCTCAACGACGACCGG 1200
GACCACACCACGGTCCTCTACGCCATCCAGAAGGTCCAGG
AGCTCGCGGAAAGCGACCGGGAGGTGCAGGGCCTCCTCCG
CACCTCCGGGAGGCGTGCACATGA

FIG. 20A

REPLACEMENT
SHEET

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VSHEAVWQHVLEHIRRSITEVEFHTWFERIRPLGIRDGVL
ELAVPTSFALDWIRRHAGLIQEGPRLPGAQAPRFELRVV
PGVVVQEDIFQPPSPPAQAQPEDTFKTSWWGPTTPWPHG 120
GAVAVAESPGRAYNPLFIYGGGRGLGKTYLMHAVGPLRAKR
FPHMRLEYVSTETFTNELINRPSARDRMTEFRERYRSVDL
LLVDDVQFIAGKERTQEEFFHTFNALYEAHKQIILSSDRP 240
PKDILTLEARLSRFEWGLITDNPAPDLETRIAILKMNAS
SGPEDPEDALEYIARQVTSNIREWEGALMRASPFASLNGV
ELTRAVAAKALRHLRPRELEADPLEIIRKAAGPVRPETPG 360
GAHGERRKKEVVLPRQLAMYLVLRELTPASLPEIDQLNDDR
DHTTVLYAIAQKVQELAESDREVQGLLRTLREACT

FIG. 20B

REPLACEMENT
SHEET

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ATGAACATAACGGTTCCCAAAAAA	ACTCCTCTCGGACCAGC	40
TTTCCCTCCTGGAGCGCATCGTCCCCTCTAGAAGCGCCAA		
CCCCCTCTACACCTACCTGGGGCTTTACGCCGAGGAAGGG		120
GCCTTGATCCTCTTCGGGACCAACGGGGAGGTGGACCTCG		
AGGTCCGCCTCCCCGCCGAGGCCCAAAGCCTTCCCCGGGT		200
GCTCGTCCCCGCCAGCCCTTCTTCCAGCTGGTGCGGAGC		
CTTCCTGGGGACCTCGTGGCCCTCGGCCTCGCCTCGGAGC		280
CGGGCCAGGGGGGGGCAGCTGGAGCTCTCCTCCGGGGCGTTT		
CCGCACCCGGCTCAGCCTGGCCCCCTGCCGAGGGCTACCCC		360
GAGCTTCTGGTGCCCGAGGGGGAGGACAAGGGGGCCTTCC		
CCCTCCGGACGCGGATGCCCTCCGGGGAGCTCGTCAAGGC		440
CTTGACCCACGTGCGCTACGCCGCGAGCAACGAGGAGTAC		
CGGGCCATCTTCCGCGGGGTGCAGCTGGAGTTCTCCCCC		520
AGGGCTTCCGGGCGGTGGCCTCCGACGGGTACCGCCTCGC		
CCTCTACGACCTGCCCCCTGCCCCAAGGGTTCCAGGCCAAG		600
GCCGTGGTCCCCGCCCGGAGCGTGGACGAGATGGTGCGGG		
TCCTGAAGGGGGCGGACGGGGCCGAGGCCGTCCTCGCCCT		680
GGGCGAGGGGGTGTTGGCCCTGGCCCTCGAGGGCGGAAGC		
GGGGTCCGGATGGCCCTCCGCCTCATGGAAGGGGAGTTCC		760
CCGACTACCAGAGGGTTCATCCCCCAGGAGTTCGCCCTCAA		
GGTCCAGGTGGAGGGGGAGGCCCTCAGGGAGGCGGTGCGC		840
CGGGTGAGCGTCCTCTCCGACCGGCAGAACCACCGGGTGG		
ACCTCCTTTTGGAGGAAGGCCGGATCCTCCTCTCCGCCGA		920
GGGGGACTACGGCAAGGGGCAGGAGGAGGTGCCCCGCCAG		
GTGGAGGGGCGGACATGGCCGTGGCCTACAACGCCCGCT		1000
ACCTCCTCGAGGCCCTCGCCCCCGTGGGGGACCGGGCCCA		
CCTGGGCATCTCCGGGCCCCACGAGCCCGAGCCTCATCTGG		1080
GGGGACGGGGAGGGGTACCGGGCGGTGGTGGTGCCCTCA		
GGGTCTAG		1128

FIG. 21A

REPLACEMENT SHEET

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MNITVPKKLLSDQLSLLERIVPSRSANPLYTYLGLYAEEG 40
ALILFGTNGEVDLEVRLPAEAQSLPRVLVPAQPFFQLVRS
LPGDLVALGLASEPGQGQLELSSGRFRTLRLSLAPAEGYP 120
ELLVPEGEDKGAFPLRTRMPSGELVKALTHVRYAASNEEY
RAIFRGVQLEFSPQGFRAVASDGYRLALYDLPLPQGFQAK 200
AVVPARSVDEMVRVLKGADGAEAVLALGEGVLALALEGGS
GVRMALRLMEGEFPDYQRVIPQEFALKVQVEGEALREAVR 280
RVSVLSDRQNHRVDLLLEEGRILLSAEGDYGKGQEEVPAQ
VEGPDMAVAYNARYLLEALAPVGDRHLGISGPTSPSLIW 360
GDGEGYRAVVVPLRVZ

FIG. 21B

REPLACEMENT SHEET

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T.th.beta	MNITVPKLLSDQLSLLERIVPSRSANPLYTYLGLYAEAGALILFGTNGEVDLEVRLP
E.coli.bet	MKFTVEREHLKPLQQVSGPLGGRPTLPILGNLLQVADGTLSTGTDLMEMVARVALV
P.mirab.be	MKFIIEREQLKPLQQVSGPLGGRPTLPILGNLLKVTENTLSLTGTDLMEMMARVSLS
H.infl.bet	MQFSISRENLLKPLQQVCGVLSNRPNIPVLNNVLLQIEDYRLTITGTDLLEVELSSQTLS
P.put.beta	MHFTIQREALLKPLQLVAGVVERRQTLPVLSNVLLVWQQQLSLTGTDLLEVELVGRVQLE
B.cap.beta	MKFTIQNDILTGNLKKITRVLVKNISFPILENILLIQVEDGTLSTTTNLEIELISKIEII
	* . * * * *
T.th.beta	AQSLP-RVLVPAQFFFQLVRSPLPGDLVALGLASEPGQGQGLELSSGRFRRLSLAPAEY
E.coli.bet	QPHEPGATTVPARKFFDICRGLP-EGAEIAVQLE---GERMLVRSGRSRFSLSTLPAADF
P.mirab.be	QSHEIGATTVPARKFFDIWRGLP-EGAEISVELD---GDRLLVRSGRSRFSLSTLPASDF
H.infl.bet	SSSENGTFTIPAKKFLDICRTLS-DDSEITVTFE---ODRALVQSGRSRFTLATQPAEEY
P.put.beta	EPAEPGEITVPARKLMDICKSLP-NDALIDIKVD---EQKLLVKAGRSRFTLSTLPANDF
B.cap.beta	TKYIPGKTTISGRKILNICRTLS-EKSKIKMQLK---NKKMYISSENSNYILSTLSADTF
 * * *
T.th.beta	PELLVPEGEDKGAFPLRTRMPSGELVKALTHVRYAASNEEYRAIFRGVQLEFSPQGFR
E.coli.bet	PNLDD--WQSEVEFTLPQAT---MKRLIEATQFSMAHQDVRYLNGMLFETEGEELRTV
P.mirab.be	PNLDD--WQSEVEFTLPQAT---LKRLIESTQFSMAHQDVRYLNGMLFETENTELRTV
H.infl.bet	PNLTD--WQSEVDFELPQNT---LRLRIEATQFSMANQDARYFLNGMKFETEGNLLRTV
P.put.beta	PTVEE--GPGSLTCNLEQSK---LRLRIERTSFAMAQDVRYLNGMLLLEVSRNTLRAV
B.cap.beta	PNHQN--FDYISKFDISSNI---LKEMIEKTEFSMGKQDVRYLNGMLLEKKDKFLRSV
	* * * *
T.th.beta	ASDGYRLALYDLPLPQGFQA--KAVVPARSVDENVRLKGADGAEAVLALGEGVLALALE
E.coli.bet	ATDGHRLAVCSMPIGQSLPS-HSVIVPRKGVIELMRMLDG-GDNPLRVQIGSNNIRAHVG
P.mirab.be	ATDGHRLAVCAMDIGQSLPG-HSVIVPRKGVIELMRLLDGSGESLLQLQIGSNNLRAHVG
H.infl.bet	ATDGHRLAVCTISLEQELQN-HSVILPRKGVLELVRLLT-NDEPARLQIGTNNLVRHLK
P.put.beta	STDGHRALALCSMSAPIEQEDRHQVIVPRKGILELARLLTD-PEGMVSIVLGQHHRATTG
B.cap.beta	ATDGYRLAISYTLKKDINF-FSIIIPNKAVMELLKLLNT-QPQLLNILIGSNSIRIYTK
	..** ***. . . . * *

FIG. 22A

T.th.beta	GGSGVRMALRLMEGEFPDYQRVIPQEFALKVQVEGEALREAVRRVSVLSDRQNHRVDLLL	
E.coli.bet	---DFIFTSKLVDRFPDYRRVLPKNPDKHLEAGCDLLKQAFARAAILSNEKFRGVRLYV	
P.mirab.be	---DFIFTSKLVDRFPDYRRVLPKNPDKTVIAGCDILKQAFSRAAILSNEKFRGVRINL	
H.infl.bet	---NTVFTSKLIDGRFPDYRRVLPRNATKIVEGNWEMLKQAFARASILSNERARSVRLSL	
P.put.beta	---EFTFTSKLVDRFPDYRRVLPGGDKLVVDRQALREAFSRTAILSNEKYRGIRLQL	
B.cap.beta	---NLIFTTQLIEGEYPDYKSVLFKEKKNPITNSILLKKSLLRVAILAHEKFCGIEIKI	
 * * *	
T.th.beta	EEGRILLSAEGDYK-GQEEVPAQVEGPDMAVAYNARYLLEALAPVG-DRAHLGISGPTS	
E.coli.bet	SENQLKITANNPEQEEAEIILDVTYSGAEIMEIGFNVSYVLDVLNALKCENVRMMLTDSVS	
P.mirab.be	TNGQLKITANNPEQEEAEIIVDVQYQGEEMEIGFNVSYLLDVLNLTLCCEEVKLLLTDAVS	
H.infl.bet	KENQLKITASNTEHEEEAEIIVDVNYNGEELFVGFNVTYILDVLNALKCNQVRMCLTDAFS	
P.put.beta	AAGQLKIQANNPEQEEAEIISVDYEGSSLEIGFNVSYLLDVLGVMTTQVRLILSDSNS	
B.cap.beta	ENGKFKVLSDNQEEETAEDLFEIDYFGEKIEISINVYVLLDVINNIIKSENIALFLNKSKS	
 * * * *	
T.th.beta	PSLIWGDG-EGYRAVVVPLRVZ	(ID#108)
E.coli.bet	SVQIEDAASQSAAYVVMPLRLZ	(ID#109)
P.mirab.be	SVQVENVASAAAYVVMPLRL-	(ID#110)
H.infl.bet	SCLIENCEDSSCEYVIMPLRL-	(ID#111)
P.put.beta	SALLQEAGNDDSSYVVMPLRL-	(ID#112)
B.cap.beta	SIQIEAENNSSNAYVVMLLKR-	(ID#113)
 *	

FIG. 22B

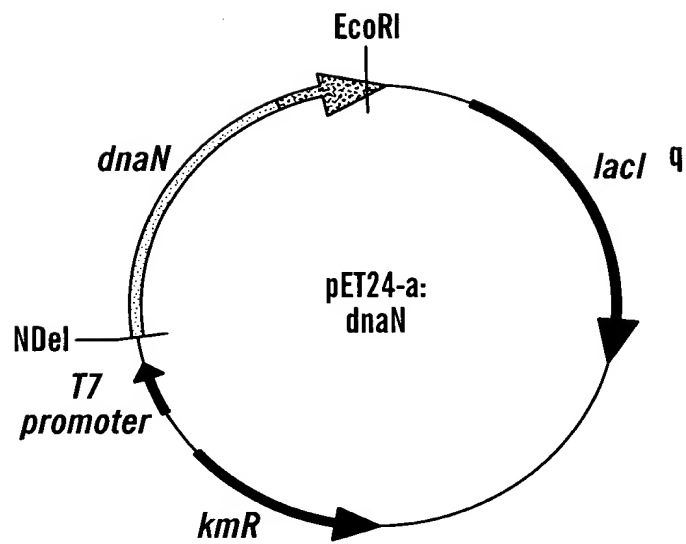


FIG. 23

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INDUCTION

MW

UNINDUCED

INDUCED



β

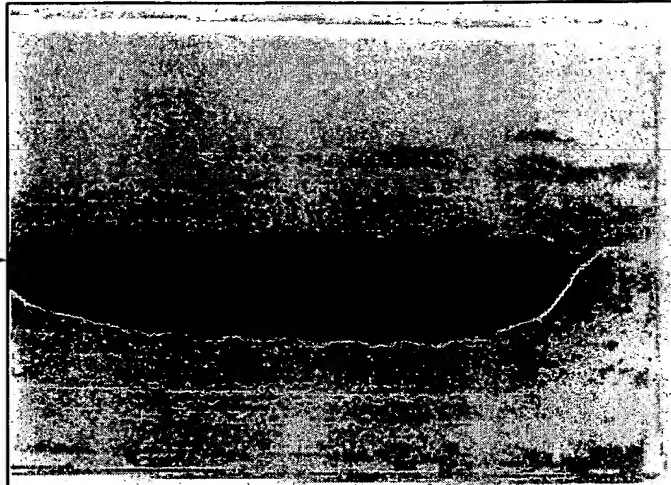
FIG. 24A

LYSIS

HEAT STEP

MonoQ COLUMN

FRACTION: 5 7 9 11 13 15 17 19 21 23 25



β

FIG. 24B

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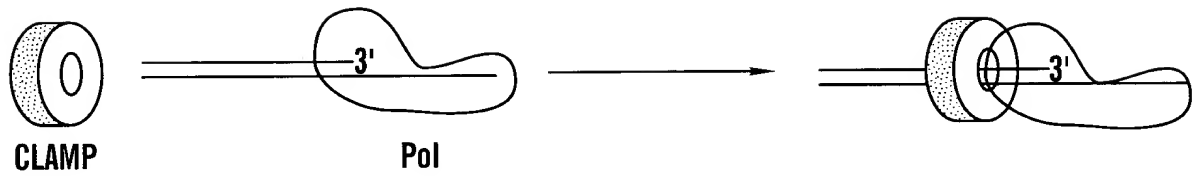


FIG. 25A

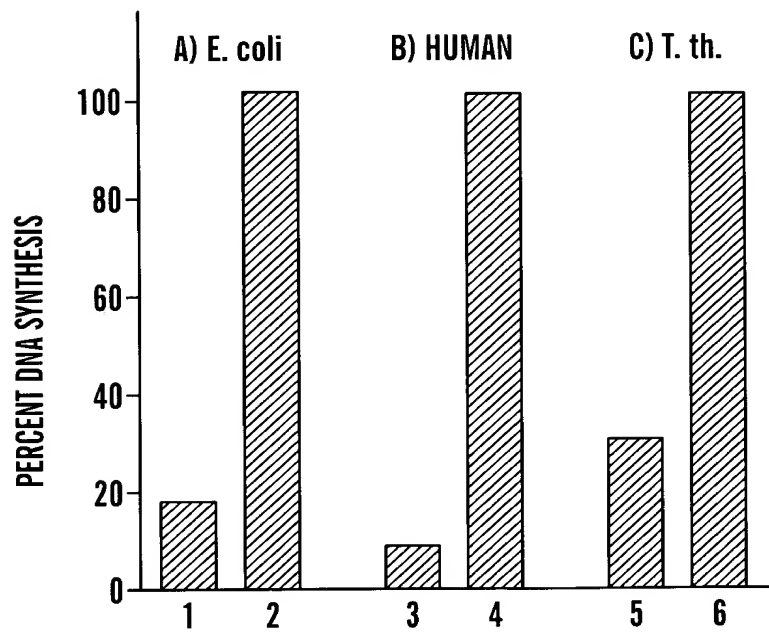


FIG. 25B

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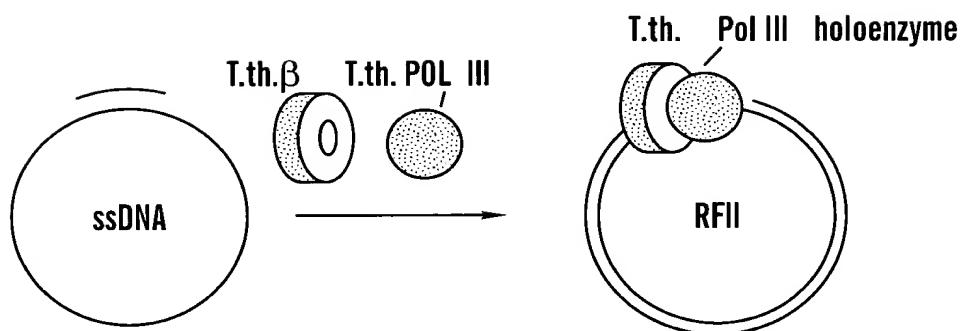


FIG. 26A

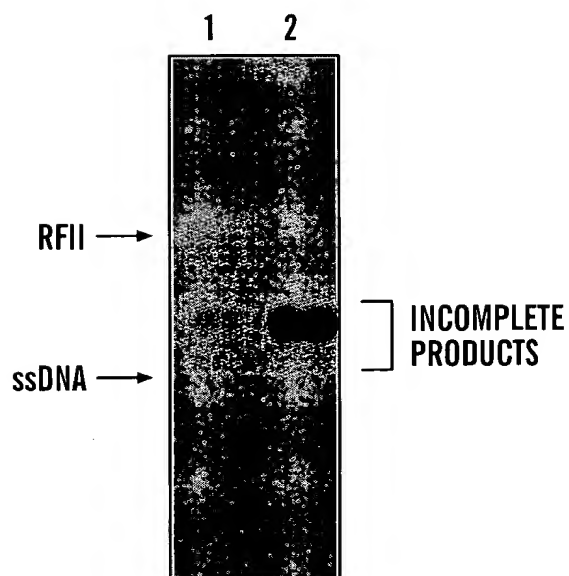


FIG. 26B

REPLACEMENT SHEET

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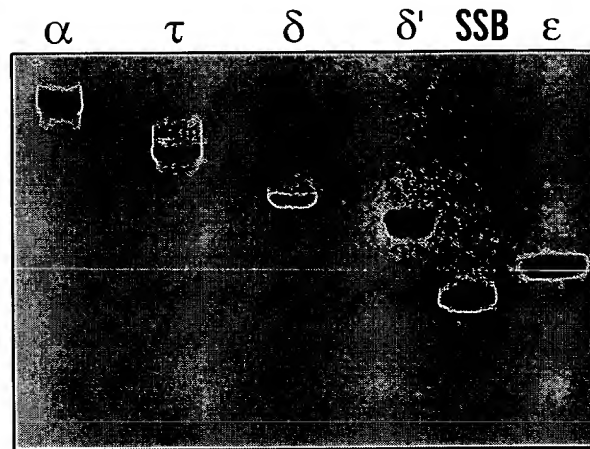


FIG. 27



FIG. 28

REPLACEMENT
SHEET

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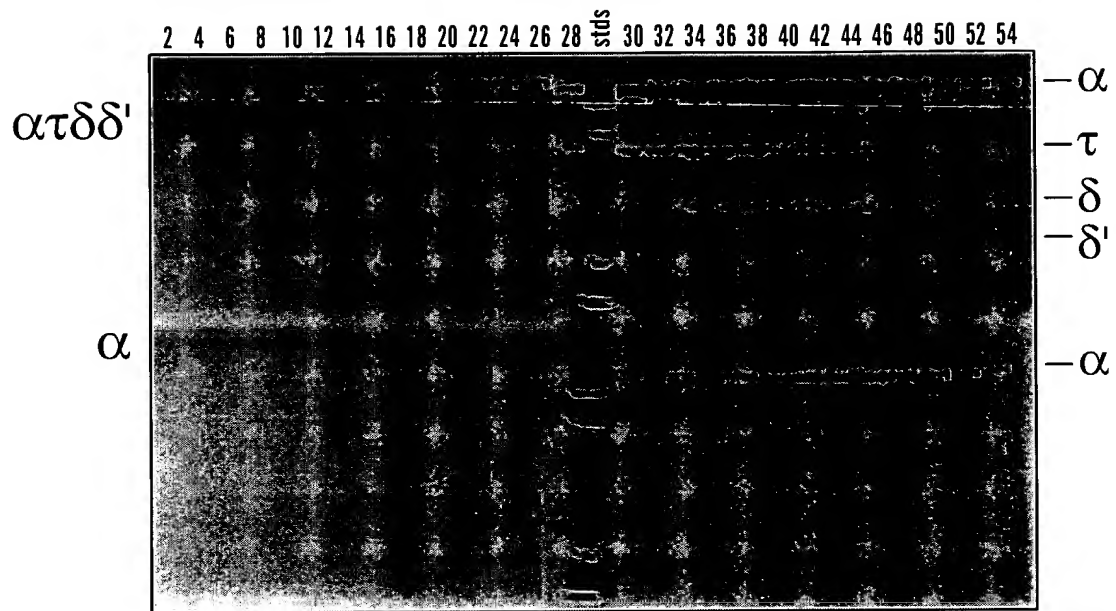


FIG. 29

REPLACEMENT
SHEET

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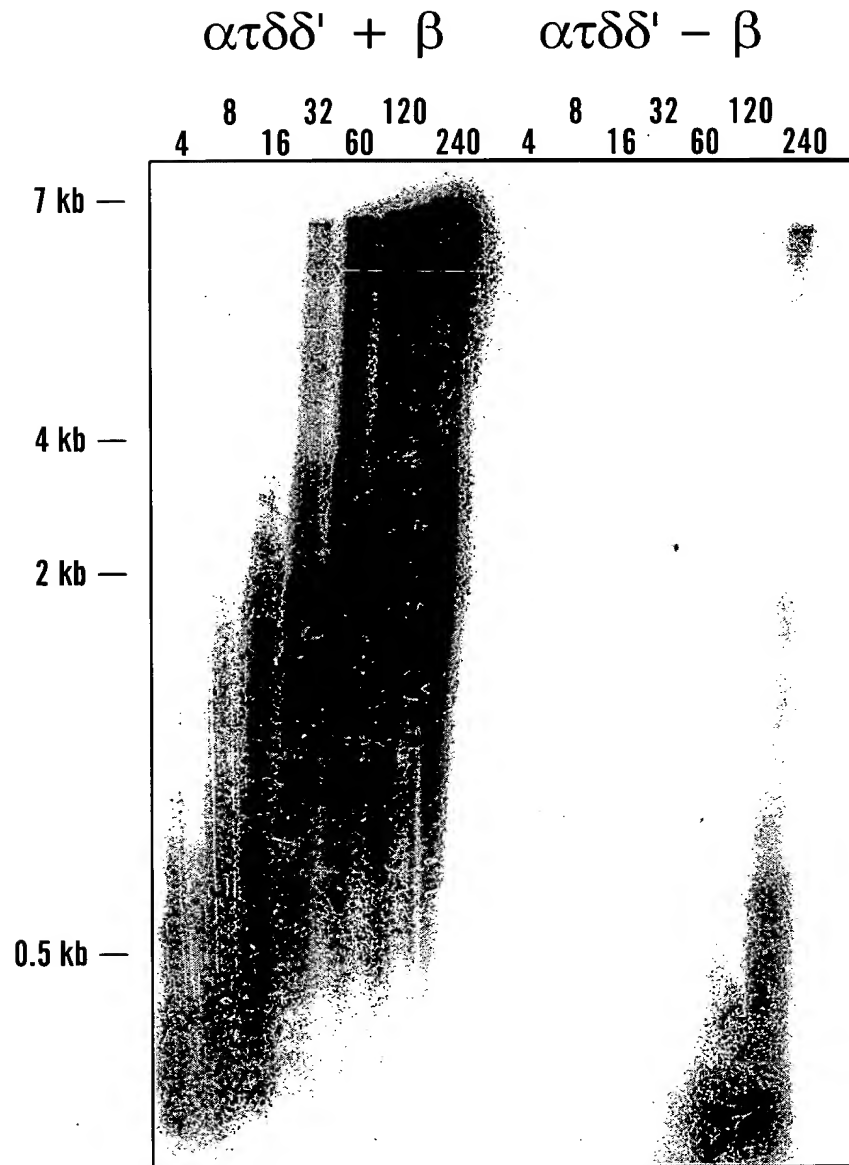


FIG. 30

REPLACEMENT SHEET

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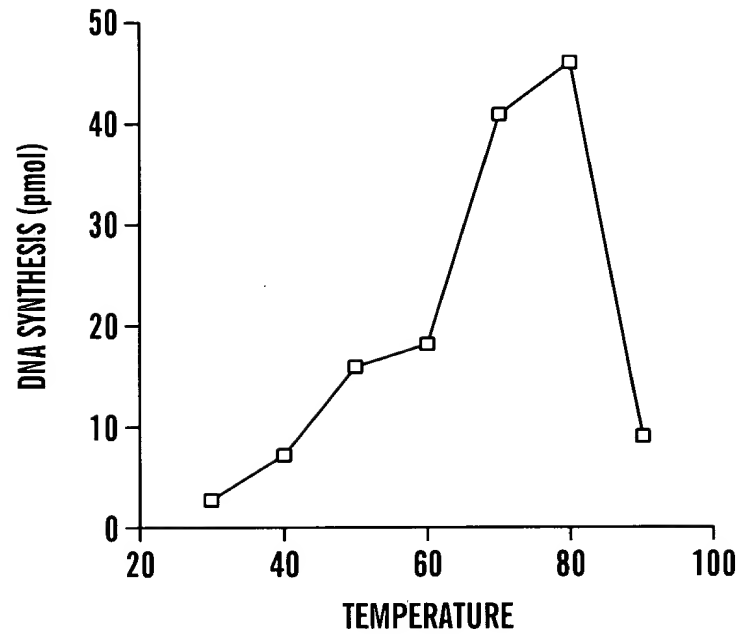


FIG. 31

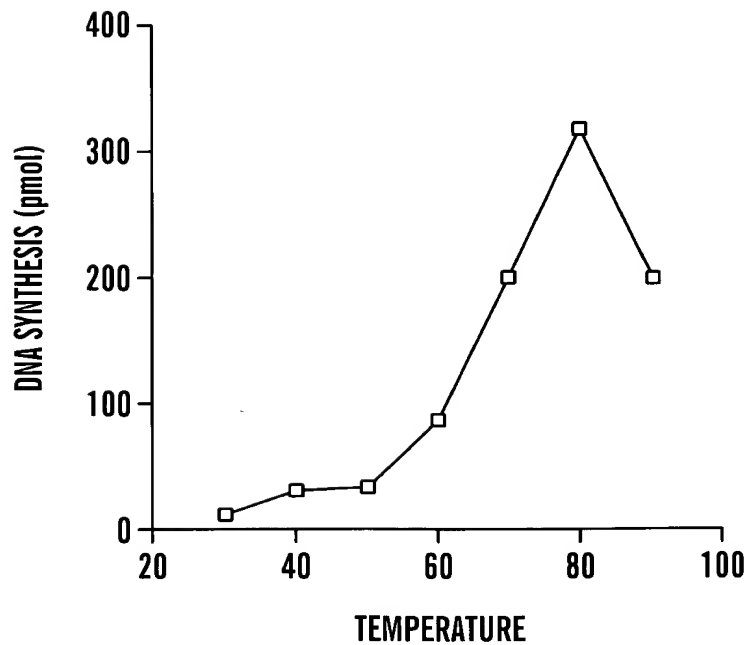


FIG. 32

REPLACEMENT SHEET

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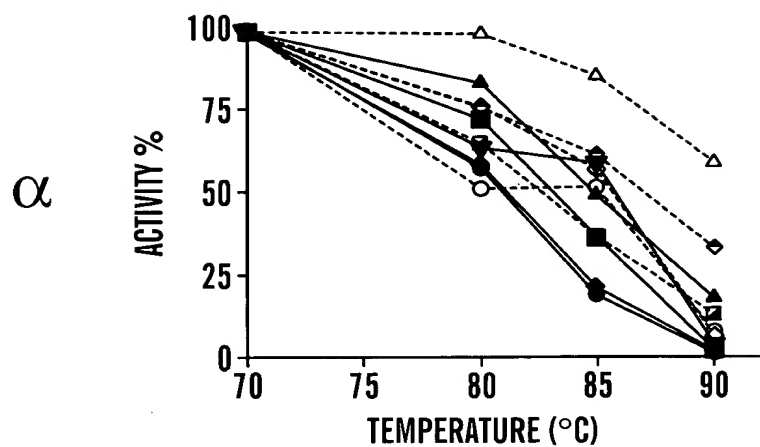


FIG. 33A

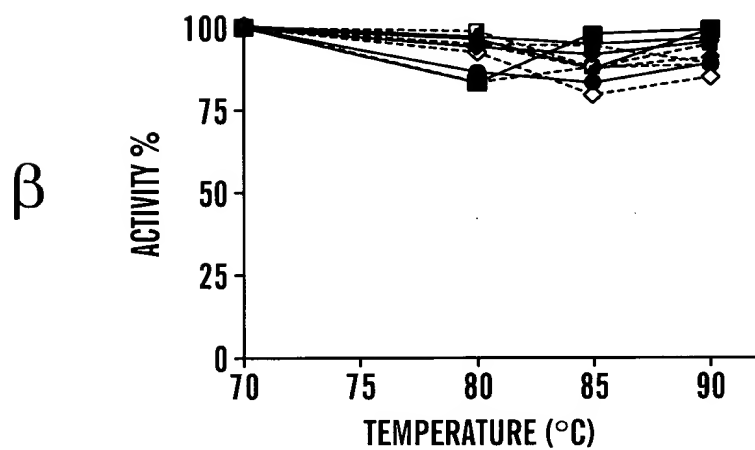


FIG. 33B

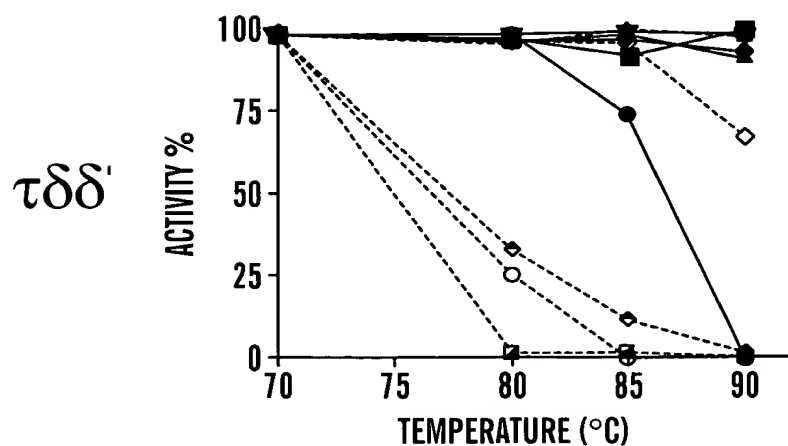


FIG. 33C

REPLACEMENT
SHEET

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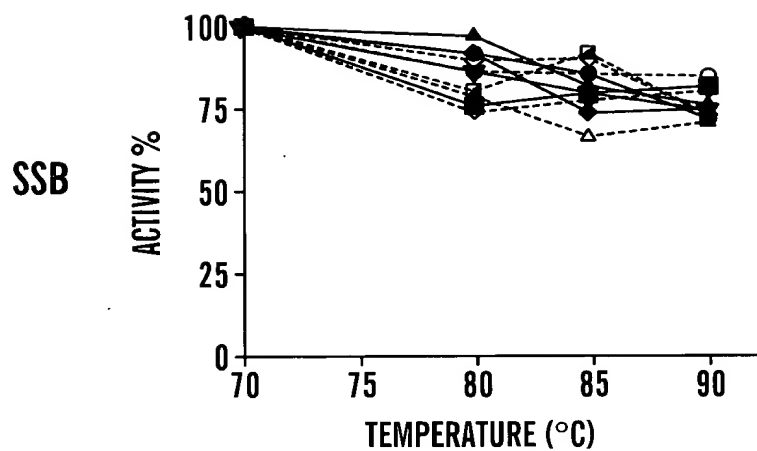


FIG. 33D

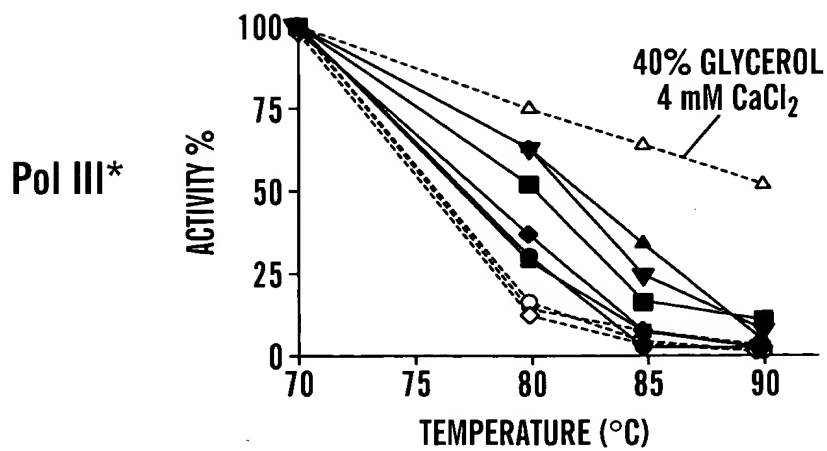


FIG. 33E

REPLACEMENT SHEET

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ATGAGTAAGGATTTTCGTCCACCTTCACCTGCACACCCAGTTCTCACTCCT	
GGACGGGGCTATAAAGATAGACGAGCTCGTGAAAAAGGCCAAAGGAGTATG	100
GATACAAAGCTGTCGGAATGTCAGACCACGGAAACCTCTTCGGTTCGTAT	
AAATTCTACAAAGCCCTGAAGGCGGAAGGAATTAAGCCCATAATCGGCAT	200
GGAAGCCTACTTTACCACGGGTTTCGAGGTTTGACAGAAAGACTAAAACGA	
GCGAGGACAACATAACCGACAAGTACAACCACCACCTCATACTTATAGCA	300
AAGGACGAAAAGGTCTAAAGAACTTAATGAAGCTCTCAACCCTCGCCTAC	
AAAGAAGGTTTTTTACTACAAACCCAGAATTGATTACGAACTCCTTGAAAA	400
GTACGGGGAGGGCCTAATAGCCCTTACCGCATGCCTGAAAGGTGTTCCCA	
CCTACTACGCTTCTATAAACGAAGTGAAAAAGGCGGAGGAATGGGTAAAG	500
AAGTTCAAGGATATATTCGGAGATGACCTTTATTTAGAACTTCAAGCGAA	
CAACATTCCAGAACAGGAAGTGGCAAACAGGAACTTAATAGAGATAGCCA	600
AAAAGTACGATGTGAAACTCATAGCGACGCAGGACGCCACTACCTCAAT	
CCCGAAGACAGGTACGCCACACGGTTCCTTATGGCACTTCAAATGAAAAA	700
GACCATTACGAACTGAGTTCGGGAAACTTCAAGTGTTCAAACGAAGACC	
TTCACTTTTGCTCCACCCGAGTACATGTGGAAAAAGTTTGAAGGTAAGTTC	800
GAAGGCTGGGAAAAGGCACTCCTGAACACTCTCGAGGTAATGGAAAAGAC	
AGCGGACAGCTTTGAGATATTTGAAAACCTCACCTACCTCCTTCCCAAGT	900
ACGACGTTCCGCCCCGACAAAACCCTTGAGGAATACCTCAGAGAACTCGCG	
TACAAAGGTTTAAAGACAGAGGATAGAAAGGGGACAAGCTAAGGATACTAA	1000
AGAGTACTGGGAGAGGCTCGAGTACGAACTGGAAGTTATAAACAAAATGG	
GCTTTGCGGGATACTTCTTGATAGTTCAGGACTTCATAAACTGGGCTAAG	1100
AAAAACGACATACCTGTTGGACCCGGAAGGGGAAGTGCTGGAGGTTCCCT	
CGTCGCATACGCCATCGGAATAACGGACGTTGACCCTATAAAGCACGGAT	1200
TCCTTTTTTGAGAGGTTCTTAAACCCCGAAAGGGTTTCCATGCCGGATATA	
GACGTGGATTTCTGTCAGGACAACAGGGAAAAGGTCATAGAGTACGTAAAG	1300
GAACAAGTACGGACACGACAACGTAGCTCAGATAATCACCTACAACGTAA	
TGAAGGCGAAGCAAACACTGAGAGACGTCGCAAGGGCCATGGGACTCCCC	1400
TACTCCACCGCGGACAAACTCGCAAAACTCATTCCTCAGGGGGACGTTCA	
GGGAACGTGGCTCAGTCTGGAAGAGATGTACAAAACGCCTGTGGAGGAAC	1500
TCCTTCAGAAAGTACGGAGAACACAGAACGGACATAGAGGACAACGTAAAG	
AAGTTCAGACAGATATGCGAAGAAAGTCCGGAGATAAAACAGCTCGTTGA	1600
GACGGCCCTGAAGCTTGAAGGTCTCACGAGACACACCTCCCTCCACGCCG	
CGGGAGTGGTTATAGCACCAAAGCCCTTGAGCGAGCTCGTTCCCCTCTAC	1700
TACGATAAAGAGGGCGAAGTCGCAACCCAGTACGACATGGTTTCAGCTCGA	
AGAACTCGGTCTCCTGAAGATGGACTTCCTCGGACTCAAACCCCTCACAG	1800
AACTGAAACTCATGAAAGAACTCATAAAGGAAAGACACGGAGTGGATATA	
AACTTCCTTGAACCTTCCCCTTGACGACCCGAAAGTTTACAAACTCCTTCA	1900
GGAAGGAAAAACCACGGGAGTGTTCCAGCTCGAAAGCAGGGGAATGAAAG	
AACTCCTGAAGAACTAAAGCCCCGACAGCTTTGACGACATCGTTGCGGTC	2000
CTCGCACTCTACAGACCCGGACCTCTAAAGAGCGGACTCGTTGACACATA	
CATTAAGAGAAAGCACGGAAAAGAACCCGTTGAGTACCCCTTCCCAGGAGC	2100
TTGAACCCGTCCTTAAGGAAACCTACGGAGTAATCGTTTATCAGGAACAG	
GTGATGAAGATGTCTCAGATACTTTCCGGCTTTACTCCCGGAGAGGCGGA	2200
TACCTTCAGAAAGGCGATAGGTAAGAAGAAAGCGGATTTAATGGCTCAGA	
TGAAAGACAAGTTCATACAGGGAGCGGTGGAAAGGGGATACCCTGAAGAA	2300
AAGATAAGGAAGCTCTGGGAAGACATAGAGAAGTTCGCTTCCTACTCCTT	
CAACAAGTCTCACTCGGTAGCTTACGGGTACATCTCCTACTGGACCGCCT	2400

FIG. 34A

REPLACEMENT SHEET

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ACGTTAAAGCCCACCTATCCCGCGGAGTTCTTCGCGGTAAAACTCACAAC	
GAAAAGAACGACAACAAGTTCCTCAACCTCATAAAAGACGCTAAACTCTT	2500
CGGATTTGAGATACTTCCCCCGACATAAACAAGAGTGATGTAGGATTTA	
CGATAGAAGGTGAAAACAGGATAAGGTTTCGGGCTTGCGAGGATAAAGGGA	2600
GTGGGAGAGGAAACTGCTAAGATAATCGTTGAAGCTAGAAAGAAGTATAA	
GCAGTTCAAAGGGCTTGCGGACTTCATAAACAAAACCAAGAACAGGAAGA	2700
TAAACAAGAAAGTCGTGGAAGCACTCGTAAAGGCAGGGGCTTTTGACTTT	
ACTAAGAAAAAGAGGAAAGAACTACTCGCTAAAGTGGCAAACCTCTGAAA	2800
AGCATTAATGGCTACACAAAACCTCCCTTTTCGGTGCACCGAAAGAAGAAG	
TGGAAGAACTCGACCCCTTAAAGCTTGAAAAGGAAGTTCTCGGTTTTTAC	2900
ATTTTCAGGGCACCCTTGACAACCTACGAAAAGCTCCTCAAGAACCGCTA	
CACACCCATTGAAGATTTAGAAGAGTGGGACAAGGAAAGCGAAGCGGTGC	3000
TTACAGGAGTTATCACGGAACCTCAAAGTAAAAAAGACGAAAAACGGAGAT	
TACATGGCGGTCTTCAACCTCGTTGACAAGACGGGACTAATAGAGTGTGT	3100
CGTCTTCCCGGGAGTTTACGAAGAGGCAAAGGAACTGATAGAAGAGGACA	
GAGTAGTGGTAGTCAAAGGTTTTCTGGACGAGGACCTTGAAACGGAAAAT	3200
GTCAAGTTCGTGGTGAAAGAGGTTTTCTCCCCTGAGGAGTTCGCAAAGGA	
GATGAGGAATACCCTTTATATATTCTTAAAAAGAGAGCAAGCCCTAAACG	3300
GCGTTGCCGAAAAACTAAAGGGAATTATTGAAAACAACAGGACGGAGGAC	
GGATACAACCTTGGTTCTCACGGTTGATCTGGGAGACTACTTCGTTGATTT	3400
AGCACTCCCACAAGATATGAAACTAAAGGCTGACAGAAAGGTTGTAGAGG	
AGATAGAAAAACTGGGAGTGAAGGTCATAATTTAGTAAATAACCCTTACT	3500
TCCGAGTAGTCCCC	

FIG. 34B

REPLACEMENT SHEET

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MSKDFVHLHLHTQFSLLDGAIKIDELVKKAKEYGYKAVGMSDHGNLFGSY	100
KFYKALKAEGIKPIIGMEAYFTTGSRFDRKTKTSEDNITDKYNHHLILIA	
KDDKGLKNLMKLSTLAYKEGFYKPRIDYELLEKYGEGLIALTACCLKGVP	200
TYYASINEVKKAEWVKKFKDIFGDDLYLELQANNIPEQEVANRNLIIEIA	
KKYDVKLIATQDAHYLNPEDRYAHTVLMALQMKKTIHELSSGNFKCSNED	300
LHFAPPEYMWKKFEGKFEGWEKALLNTLEVMEKTADSFEIFENSTYLLPK	
YDVPPDKTLEEYLRELAYKGLRQRIERGQAKDTKEYWERLEYELEVINKM	400
GFAGYFLIVQDFINWAKKNDIPVGPGRGSAGGSLVAYAIGITDVPDIKHG	
FLFERFLNPERVSMPIIDVDFCQDNREKVIEWVRNKYGHDNVAQIITYNV	500
MKAKQTLRDVARAMGLPYSTADKLAKLIPOGDVQGTWLSLEEMYKTPVEE	
LLQKYGEHRTDIEDNVKKFRQICEESPEIKQLVETALKLEGLTRHTSLHA	600
AGVVIAPKPLSELVPLYDYDKEGEVATQYDMVQLEELGLLKMDFLGLKTLT	
ELKLMKELIKERHGV DINFLELPLDDPKVYKLLQEGKTTGVFQLESRGMK	700
ELLKKLKPDSFDDIVAVLALYRPGPLKSGLVDTYIKRKHGKEPVEYPFPE	
LEPVLKETYGIVIVYQEQVMKMSQILSGFTPGEADTLRKAIGKKKADLMAQ	800
MKDKFIQGAVERGYPEEKIRKLWEDIEKFASYSFNKSHSVAYGYISYWTA	
YVKAHYPAEFFAVKLTTEKNDNKFLNLIKDAKLFGFEILPPDINKSDVGF	900
TIEGENRIRFGLARIKGVGEETAKIIVEARKKYKQFKGLADFINKTKNRK	
INKKVVEALVKAGAFDFTKKKRKELLAKVANSEKALMATQNSLFGAPKEE	1000
VEELDPLKLEKEVLGFYISGHPLDNYEKLLKNRYTPIEDLEEDKESEAV	
LTGVITELKVKKTKNGDYMAVFNLVDKTGLIECVVFPGVYEEAKELIEED	1100
RVVVVKGFLDEDLETENVKFVVKEVFSPEEFAKEMRNTLYIFLKREQALN	
GVAEKLKGI IENNRTEDEGYNLVLTVDLGDYFVDLALPQDMKLKADRKVVE	1161
EIEKLGVKVII	

FIG. 35

REPLACEMENT SHEET

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ATGAACTACGTTCCCTTCGCGAGAAAGTACAGACCGAAATTCTTCAGGGA	
AGTAATAGGACAGGAAGCTCCCGTAAGGATACTCAAAAACGCTATAAAAA	100
ACGACAGAGTGGCTCACGCCTACCTCTTTGCCGGACCGAGGGGGGTTGGG	
AAGACGACTATTGCAAGAATTCTCGCAAAAGCTTTGAACTGTAAAAATCC	200
CTCCAAAGGTGAGCCCTGCGGTGAGTGCGAAAACTGCAGGGGAGATAGACA	
GGGGTGTGTTCCCTGACTTAATTGAAATGGATGCCGCCTCAAACAGGGGT	300
ATAGACGACGTAAGGGCATTTAAAAGAAGCGGTCAATTACAAACCTATAAA	
AGGAAAGTACAAGGTTTACATAATAGACGAAGCTCACATGCTCACGAAAG	400
AAGCTTTCAACGCTCTCTTAAAAACCCTCGAAGAGCCCCCTCCCAGAACT	
GTTTTCGTCCTTTGTACCACGGAGTACGACAAAATTCTTCCCACGATACT	500
CTCAAGGTGTCAGAGGATAATCTTCTCAAAGGTAAGAAAGGAAAAAGTAA	
TAGAGTATCTAAAAAAGATATGTGAAAAGGAAGGGATTGAGTGCGAAGAG	600
GGAGCCCTTGAGGTTCTGGCTCATGCCCTCTGAAGGGTGATGAGGGATGC	
AGCCTCTCTCCTGGACCAGGCGAGCGTTTACGGGGAAGGCAGGGTAACAA	700
AAGAAGTAGTGGAGAACTTCTCGGAATTCTCAGTCAGGAAAGCGTTAGG	
AGTTTTCTGAAATTGCTTCTGAACTCAGAAGTGGACGAAGCTATAAAGTT	800
CCTCAGAGAACTCTCAGAAAAGGGCTACAACCTGACCAAGTTTTTGGGAGA	
TGTTAGAAGAGGAAGTGAGAAACGCAATTTTAGTAAAGAGCCTGAAAAAT	900
CCCGAAAGCGTGGTTCAGAACTGGCAGGATTACGAAGACTTCAAAGACTA	
CCCTCTGGAAGCCCTCCTCTACGTTGAGAACCTGATAAACAGGGGTAAAG	1000
TTGAAGCGAGAACGAGAGAACCCTTAAGAGCCTTTGAACTCGCGGTAAATA	
AAGAGCCTTATAGTCAAAGACATAATTCCCGTATCCCAGCTCGGAAGTGT	1100
GGTAAAGGAAACCAAAAAGGAAGAAAAGAAAGTTGAAGTAAAAGAAGAGC	
CAAAAGTAAAAGAAGAAAAACCAAAGGAGCAGGAAGAGGACAGGTTCCAG	1200
AAAGTTTTTAAACGCTGTGGACGGCAAAATCCTTAAAAGAATACTTGAAGG	
GGCAAAAAGGGAAGAAAGAGACGGAAAAATCGTCCTAAAGATAGAAGCCT	1300
CTTATCTGAGAACCATGAAAAAGGAATTTGACTCACTAAAGGAGACTTTT	
CCTTTTTTTAGAGTTTGAACCCGTGGAGGATAAAAAAAACCTCAGAAGTC	1400
CAGCGGGACGAGGCTGTTTTAAAGGTAAAGGAGCTCTTCAATGCAAAAAT	
ACTCAAAGTACGAAGTAAAAGCTAAGGTCTATAAAGGTGAGAATGCCCGTG	1500
GAAGAGATAGGGCTGTTTAACGCACTAATAGACGGCTTGCCCAGGTACGC	
ACTCACGAGGACGAAGGAAAAGGGAAAGGGAGAAGTTTTCGTTTTTAGCGA	1600
CTCCTTATAAAGTCAAGGAATTGATGGAAGCTATGGAGGGTATGAAAAAA	
CACATAAAGGATTTAGAAATCCTCGGAGAGACGGATGAGGATTTAACTTT	1700
TTAAAGTATGGGTGTATCTGAGCAAAGGTTTAAGCTAAAAACAAACCTGA	
AACCCGCAGGGGACCAGCCGAAAGCCATAAAAAAACTCCTTGAAAACCTA	1800
AGGAAAGGCGTAAAAGAACAACACTTCTCGGAGTCACGGGAAGCGGAAA	
GACTTTTACTCTAGCAAACGTAATAGCGAAGTACAACAAACCAACTCTTG	1900
TGGTAGTTCACAACAAAATTCTCGCGGCACAGCTATACAGGGAGTTTAAA	
GAACTATTCCCTGAAAACGCTGTAGAGTACTTTGTCTCTTACTACGACTA	2000
TTACCAACCTGAAGCCTACATTCCCGAAAAAGATTTATACATAGAAAAGG	
ACGCGAGTATAAACGAAAGCTGGAACGTTTCAGACACTCCGCCACGATAT	2100
CCGTTCTAGAAAGGAGGGACGTTATAGTAGTTGCTTCAGTTTCTTGATA	
TACGGACTCGGGAAACCTGAGCACTACGAAAACCTGAGGATAAAACTCCA	2200
AAGGGGAATAAGACTGAACTTGAGTAAGCTCCTGAGGAACTCGTTGAGC	
TAGGATATCAGAGAAATGACTTTGCCATAAAGAGGGCTACCTTCTCGGTT	2300
AGGGGAGACGTGGTTGAGATAGTCCCTTCTCACACGGAAGATTACCTCGT	
GAGGGTAGAGTTCTGGGACGACGAAGTTGAAAGAATAGTCCTCATGGACG	2400
CTCTGAAC	

FIG. 36

REPLACEMENT SHEET

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MNYVPFARKYRPKFFREVIGQEAPVRILKNAIKNDRVAHAYLFAGPRGVG	
KTTIARILAKALNCKNPSKGEPCGECENCREIDRGVFPDLIEMDAASNRG	100
IDDVRLKEAVNYKPIKGKYKVYIIDEAHMLTKEAFNALLKTLEPPPRRT	
VFVLCTTEYDKILPTILSRCQRIIFSKVRKEKVIEYLKKICEKEGIECEE	200
GALEVLAHASEGCMRDAASLLDQASVYGEGRVTKEVVENFLGILSQESVR	
SFLKLLLNSEVDEAIKFLRELSEKGYNLTKEWEMLEEEVRNAILVKSLKN	300
PESVVQNWQDYEDFKDYPLEALLYVENLINRGKVEARTREPLRAFELAVI	
KSLIVKDIIPVSQLGSVVKETKKEEKKVEVKEEPKVKEEKPKEQEEDRFQ	400
KVLNAVDGKILKRILEGAKREERDGKIVLKIEASYLRTMKKEFDLSLKETF	
PFLEFEPVEDKKKPQKSSGTRLF	473

FIG. 37

REPLACEMENT SHEET

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ATGCGCGTTAAGGTGGACAGGGAGGAGCTTGAAGAGGTTCTTAAAAAAGC	
AAGAGAAAGCACGGAAAAAAAAGCCGCACTCCCGATACTCGCGAACTTCT	100
TACTCTCCGCAAAAGAGGAAAACCTTAATCGTAAGGGCAACGGACTTGGAA	
AACTACCTTGTAAGTCTCCGTAAAGGGGGAGGTTGAAGAGGAAGGAGAGGT	200
TTGCGTCCACTCTCAAAAACCTCTACGATATAGTCAAGAACTTAAATTCCG	
CTTACGTTTACCTTCATACGGAAGGTGAAAAACTCGTCATAACGGGAGGA	300
AAGAGTACGTACAAACTTCCGACAGCTCCCGCGGAGGACTTTCCCGAATT	
TCCAGAAATCGTAGAAGGAGGAGAAACACTTTCGGGAAACCTTCTCGTTA	400
ACGGAATAGAAAAGGTAGAGTACGCCATAGCGAAGGAAGAAGCGAACATA	
GCCCTTCAGGGAATGTATCTGAGAGGATACGAGGACAGAATTCACTTTGT	500
GTTTCGGACGGTCACAGGCTTGCACCTTATGAACCTCTACGTAAACATTGA	
AAAGAGTGAAGACGAGTCTTTTGCTTACTTCTCCACTCCCGAGTGGAAC	600
TCGCCGTTAGCTCCTGGAAGGAGAATTCCCGGACTACATGAGTGTCATCC	
CTGAGGAGTTTTTCGGCGGAAGTCTTGTTTGAGACAGAGGAAGTCTTAAAG	700
GTTTTAAAGAGGTTGAAGGCTTTAAGCGAAGGAAAAGTTTTTCCCGTGAA	
GATTACCTTAAGCGAAAACCTTGCCATCTTTGAGTTCGCGGATCCGGAGT	800
TCGGAGAAGCGAGAGAGGAAATTGAAGTGGAGTACACGGGAGAGCCCTTT	
GAGATAGGATTCAACGGAAATACCTTATGGAGGCGCTTGACGCCTACGAC	900
AGCGAAAGAGTGTGGTTCAAGTTCACAACCCCCGACACGGCCACTTTATT	
GGAGGCTGAAGATTACGAAAAGGAACCTTACAAGTGCATAATAATGCCGA	1000
TGAGGGTGTAGCCATGAAAAAAGCTTTAATCTTTTTATTGAGCTTGAGCC	
TTTTAATTCCTGCGTTTAGCGAAGCCAAACCCAAGTCTTC	1090

FIG. 38

MRVKVDREELEEVLLKKARESTEKKAALPILANFLLSAKEENLIVRATDLE	
NYLVVSVKGEVEEEGEVVCVHSQKLYDIVKNLNSAYVYLHTEGEKLVITGG	100
KSTYKLPTAPAEDFPEFPEIVEGGETLSGNLLVNGIEKVEYAIKKEEANI	
ALQGMYLRGYEDRIHFVGS DGHRLALYEPLGEFSKELLIPRKS LKVLKKL	200
ITGIEDVNIEKSEDES FAYFSTPEWK LAVRLLEGEFPDYMSVIP EEFSAE	
VL FETEEVLKVLKRLKALSEGKVPVKITLSENLAIFEFADPEFGEAREE	300
IEVEYTGEFPFEIGFNGKYLMEALDAYDSERVWFKFTTPDTATLLEAEDYE	
KEPYKCIIMPMRV	363

FIG. 39

REPLACEMENT SHEET

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GTGGAAACCACAATATTCCAGTTCCAGAAAACCTTTTTCACAAAACCTCC	100
GAAGGAGAGGGTCTTCGTCTTCATGGAGAAGAGCAGTATCTCATAAGAA	
CCTTTTTGTCTAAGCTGAAGGAAAAGTACGGGGAGAATTACACGGTTCTG	200
TGGGGGGATGAGATAAGCGAGGAGGAATTCTACACTGCCCTTTCCGAGAC	
CAGTATATTCGGCGGTTCAAAGGAAAAAGCGGTGGTCATTTACAACCTTCG	300
GGGATTTTCCTGAAGAAGCTCGGAAGGAAGAAAAAGGAAAAAGAAAGGCTT	
ATAAAAGTCCTCAGAAACGTAAAGAGTAACTACGTATTTATAGTGTACGA	400
TGCGAAACTCCAGAAACAGGAACCTTTCTTCGGAACCTCTGAAATCCGTAG	
CGTCTTTCGGCGGTATAGTGGTAGCAAACAGGCTGAGCAAGGAGAGGATA	500
AAACAGCTCGTCCTTAAGAAGTTCAAAGAAAAAGGGATAAACGTAGAAAA	
CGATGCCCTTGAATACCTTCTCCAGCTCACGGGTTACAACCTTGATGGAGC	600
TCAAACCTTGAGGTTGAAAAACTGATAGATTACGCAAGTGAAAAGAAAATT	
TTAACACTCGATGAGGTAAAGAGAGTAGCCTTCTCAGTCTCAGAAAACGT	700
AAACGTATTTGAGTTCGTTGATTTACTCCTCTTAAAGATTACGAAAAGG	
CTCTTAAAGTTTTGGACTCCCTCATTTTCCTTCGGAATACACCCCCTCCAG	800
ATTATGAAAATCCTGTCCTCCTATGCTCTAAACCTTTACACCCTCAAGAG	
GCTTGAAGAGAAGGGAGAGGACCTGAATAAGGCGATGGAAAGCGTGGGAA	900
TAAAGAACAACCTTTCTCAAGATGAAGTTCAAATCTTACTTAAAGGCAAAC	
TCTAAAGAGGACTTGAAGAACCTAATCCTCTCCCTCCAGAGGATAGACGC	1000
TTTTTCTAAACCTTTACTTTCAGGACACAGTGCAGTTGCTGGGGATTCTT	
GACCTCAAGACTGGAGAGGGAAGTTGTGAAAAATACTTCTCATGGTGGAT	1093
AATCTTTTTTATGAAGTTTGCGGTTTGCGTTTTTCCCGGTTCT	

FIG. 40

VETTI FQFKTFFTKPPKERVFLHGEEQYLIRTFLSKLKEKYGENYTVL	100
WGDEISEEEFYTALSETSIFGGSKEKAVVIYNFGDFLKKLGRKKKEKERL	
IKVLRNVKSNYVFIVYDAKLQKQELSSSEPLKSVASFGGIVVANRLSKERI	200
KQLVLKKFKEKGINVENDALEYLLQLTGYNLMELKLEVEKLIDYASEKKI	
LTLDEVKRVAFSVSENVNVFEFVDLLLLKDYEKALKVLDLSLISFGIHPLQ	300
IMKILSSYALKLYTLKRLEEKGEDLNKAMESVGIKNNFLKMKFKSYLKAN	
SKEDLKNLILSLQRIDAFSKLYFQDTVQLLRDFLTSRLEREVVKNTSHGG	

FIG. 41

REPLACEMENT SHEET

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ATGGAAAAAGTTTTTTTGGAAAACTCCAGAAAACCTTGACATACCCGG	
AGGACTCCTTTTTTTACGGCAAAGAAGGAAGCGGAAAGACGAAAACAGCTT	100
TTGAATTTGCAAAAGGTATTTTTATGTAAGGAAAACGTACCTGGGGATGCG	
GAAGTTGTCCCTCCTGCAAACACGTAAACGAGCTGGAGGAAGCCTTCTTT	200
AAAGGAGAAATAGAAGACTTTAAAGTTTATAAGACAAGGACGGTAAAAAG	
CACTTCGTTTACCTTATGGGCGAACATCCCGACTTTGTGGTAATAATCCC	300
GAGCGGACATTACATAAAGATAGAACAGATAAGGGAAGTTAAGAAGCTTTG	
CCTATGTGAAGCCCGCACTAAGCAGGAGAAAAAGTAATTATAATAGACGAC	400
GCCACGCGATGACCTCTCAGGCGGCAAACGCTCTTTTAAAGGTATTGGA	
AGAGCCACCTGCGGACACCACCTTTATCTTGACCACGAACAGGCGTTCTG	500
CAATCCTGCCGACTATCCTCTCCAGAACTTTTCAAGTGGAGTTCAAGGGC	
TTTTTCAGTAAAAGAGGTTATGGAAATAGCGAAAGTAGACGAGGAAATAGC	600
GAAACTCTCTGGAGGCAGTCTAAAAAGGGCTATCTTACTAAAGGAAAACA	
AAGATATCCTAAACAAAGTAAAGGAATTCTTGAAAACGAGCCGTTAAAA	700
GTTTACAAGCTTGCAAGTGAATTCGAAAAGTGGGAACCTGAAAAGCAAAA	
ACTCTTCCTTGAAATTATGGAAGAATTGGTATCTCAAAAATTGACCGAAG	800
AGAAAAAAGACAATTACACCTACCTTCTTGATACGATCAGACTCTTTAAA	
GACGGACTCGCAAGGGGTGTAAACGAACCTCTGTGGCTGTTTACGTTAGC	900
CGTTCAGGCGGATTAATAAACCGTTATTGATTCCGTAACATTTAAACCTT	
AATCTAAATTATGAGAGCCTTTGAAGGAGGTCTGGTATGGAAAATTTGAA	1000
GATTAGATATATAGATACGAGGAAGATAGGAACCGTGAGCGGTGTAAAAG	
T	1051

FIG. 42

MEKVFLEKLQKTLHIPGGLLFYGKEGSGKTKTAFEFAKGILCKENVPWGC	
GSCPSCKHVNELEEAFKGEIEDFKVYKDKDGKKHFVYLMGEHPDFVVI	100
PSGHYIKIEQIREVKNFAYVKPALSRKVI IIDDAHAMTSQAANALLKVL	
EEPPADTTFILTTNRRSAILPTILSRTFQVEFKGFSVKEVMEIAKVDEEI	200
AKLSGGSCLKRAILLKENKDI LNKVKEFLENEPLKVYKLASEFEKWEPEKQ	
KLFLEIMEELVSQKLTEEEKDNYTYLLDTIRLFKDG LARGVNEPLWLFTL	300
AVQAD	

FIG. 43

REPLACEMENT SHEET

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ATGAACTTCCTGAAAAAGTTCCTTTTACTGAGAAAAGCTCAAAAGTCTCC	
TTACTTCGAAGAGTTCTACGAAGAAATCGATTTGAACCAGAAGGTGAAAG	100
ATGCAAGGTTTGTAGTTTTTGAAGTGCAGAACCTCGACGTAAAG	
AAGGCAAAACTCCTTTCAATAGGTGCGGTTGAGGTTAAAAACCTGGAAAT	200
AGACCTCTCTAAATCTTTTTACGAGATACTCAAAAGTGACGAGATAAAGG	
CGGCGGAGATACATGGAATAACCAGGGAAGACGTTGAAAAGTACGGAAAG	300
GAACCAAAGGAAGTAATATACGACTTTCTGAAGTACATAAAGGGAAGCGT	
TCTCGTTGGCTACTACGTGAAGTTTGACGTCTCACTCGTTGAGAAGTACT	400
CCATAAAGTACTTCCAGTATCCAATCATCAACTACAAGTTAGACCTGTTT	
AGTTTCGTGAAGAGAGAGTACCAGAGTGGCAGGAGTCTTGACGACCTTAT	500
GAAGGAACTCGGTGTAGAAATAAGGGCAAGGCACAACGCCCTTGAAGATG	
CCTACATAACCGCTCTTCTTTTCCCTAAAGTACGTTTACCCGAACAGGGAG	600
TACAGACTAAAGGATCTCCCGATTTTCCTT	

FIG. 44

MNFLKKFLLLRKAQKSPYFEEFYEEIDLNQKVKDARFVVFDCEATELDVK	
KAKLLSIGAVEVKNLEIDLKSFYEILKSDEIKAAEIHGITREDVEKYGK	100
EPKEVIYDFLKYIKGSVLVGYYVKFDVSLVEKYSIKYFQYPIINYKLDLF	
SFVKREYQSGRSLDDLMKELGVEIRARHNALEDAYITALLFLKYVYPNRE	200
YRLKDLPIFL	

FIG. 45

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ATGCTCAATAAGGTTTTTATAATAGGAAGACTTACGGGTGACCCCGTTAT	
AACTTATCTACCGAGCGGAACGCCCGTAGTAGAGTTTACTCTGGCTTACA	100
ACAGAAGGTATAAAAACCAGAACGGTGAATTTTCAGGAGGAAAGTCACTTC	
TTTGACGTAAAGGCGTACGGAAAAATGGCTGAAGACTGGGCTACACGCTT	200
CTCGAAAGGATACCTCGTACTCGTAGAGGGAAGACTCTCCCAGGAAAAGT	
GGGAGAAAGAAGGAAAGAAGTTCTCAAAGGTCAGGATAATAGCGGAAAAC	300
GTAAGATTAATAAACAGGCCGAAAGGTGCTGAACTTCAAGCAGAAGAAGA	
GGAGGAAGTTCCTCCCATTTGAGGAGGAAATTGAAAAACTCGGTAAAGAGG	400
AAGAGAAGCCTTTTACCGATGAAGAGGACGAAATACCTTTTAAATTTTGA	
GGAGGTAAAGTATGGTAGTGAGAGCTCCTAAGAAGAAAGTTTGTATGTA	500
CTGTGAACAAAAGAGAGAGCCAGATT	

FIG. 46

MLNKVFIIGRLTGDPVITYLPSGTPVVEFTLAYNRRYKNQNGEFQEESHF	
FDVKAYGKMAEDWATRFSGYLVLVEGRLSQEKWEKEGKKFSKVRIIAEN	100
VRLINRPKGAELQAEIEEEVPPIEEEIEKLGKEEEKPFTDEEDEIPF	

FIG. 47

REPLACEMENT SHEET

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ATGCAATTTGTGGATAAACTTCCCTGTGACGAATCCGCCGAGAGGGCGGT	
TCTTGGCAGTATGCTTGAAGACCCCGAAAACATACCTCTGGTACTTGAAT	100
ACCTTAAAGAAGAAGACTTCTGCATAGACGAGCACAAGCTACTTTTCAGG	
GTTCTTACAAACCTCTGGTCCGAGTACGGCAATAAGCTCGATTTTCGTATT	200
AATAAAGGATCACCTTGAAAAGAAAACTTACTCCAGAAAATACCTATAG	
ACTGGCTCGAAGAACTCTACGAGGAGGCGGTATCCCCTGACACGCTTGAG	300
GAAGTCTGCAAAATAGTAAAACAACGTTCCGCACAGAGGGCGATAATTCA	
ACTCGGTATAGAACTCATTCACAAAGGAAAGGAAAACAAAGACTTTCACA	400
CATTAATCGAGGAAGCCCAGAGCAGGATATTTTCCATAGCGGAAAGTGCT	
ACATCTACGCAGTTTTTACCATGTGAAAGACGTTGCGGAAGAAGTTATAGA	500
ACTCATTTTATAAATTCAAAGCTCTGACAGGCTAGTCACGGGACTCCCAA	
GCGGTTTCACGGAACCTCGATCTAAAGACGACGGGATTCCACCCTGGAGAC	600
TTAATAATACTCGCCGCAAGACCCGGTATGGGGAAAACCGCCTTTATGCT	
CTCCATAATCTACAATCTCGCAAAAGACGAGGGAAAACCTCAGCTGTAT	700
TTTCCTTGGAATGAGCAAGGAACAGCTCGTTATGAGACTCCTCTCTATG	
ATGTCGGAGGTCCCACTTTTCAAGATAAGGTCTGGAAGTATATCGAATGA	800
AGATTTAAAGAAGCTTGAAGCAAGCGCAATAGAACTCGCAAAGTACGACA	
TATACCTCGACGACACACCCGCTCTCACTACAACGGATTTAAGGATAAGG	900
GCAAGAAAGCTCAGAAAGGAAAAGGAAGTTGAGTTCGTGGCGGTGGACTA	
CTTGCAACTTCTGAGACCGCCAGTCCGAAAGAGTTCAAGACAGGAGGAAG	1000
TGGCAGAGGTTTCAAGAACTTAAAAGCCCTTGCAAAGGAACTTCACATT	
CCCGTTATGGCACTTGCGCAGCTCTCCCGTGAGGTGGAAAAGAGGAGTGA	1100
TAAAAGACCCCGAGCTTGCGGACCTCAGAGAATCCGGACAGATAGAACAGG	
ACGCAGACCTAATCCTTTTCCCTCCACAGACCCGAGTACTACAAGAAAAAG	1200
CCAAATCCCGAAGAGCAGGGTATAGCGGAAGTGATAATAGCCAAGCAAAG	
GCAAGGACCCACGGACATTGTGAAGCTCGCATTATTAAGGAGTACACTA	1300
AGTTTGCAAACCTAGAAGCCCTTCCTGAACAACCTCCTGAAGAAGAGGAA	
CTTTCCGAAATTATTGAAACACAGGAGGATGAAGGATTCTGAAGATATTGA	1400
CTTCTGAAAATTAAGGTTTTATAATTTTATCTTGGCTATCCGGGGTAGCT	
CAATCGGCAGAGCGGGTGGCTG	1472

FIG. 48

MQFVDKLPCEDESAERAVLGSMLEDPENIPLVLEYLKEEDFCIDEHKLLFR	
VLTNLWSEYGNKLDVFLIKDHLEKKNLLQKIPIDWLEELYEEAVSPDTLE	100
EVCKIVKQRSAQRAIIQLGITSTQFYHVKDVAEEVIELIYKFKSSDRLVT	
GLPSGFTELDLKTTFHFGDLIIILARPFGMGKTAFMLSIIYNLAKDEGKP	200
SAVFSLEMSKEQLVMRLLSMMSEVPLFKIRSGSISNEDLKKLEASAIELA	
KYDIYLDLTPALTTTDLRIRARKLRKEKEVEFVAVDYLQLLRPPVRKSSR	300
QEEVAEVSRLKALAKELHIPVMALAQLSREVEKRS DKRPQLADLRESGQ	
IEQDADLILFLHRPEYYKKKPNPEEQGIAEVIIAKQRQGPTDIVKLAFIK	400
EYTKFANLEALPEQPPEEEELSEIIETQEDEGFEDIDF	

FIG. 49

REPLACEMENT SHEET

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ATGTCCTCGGACATAGACGAACTTAGACGGGAAATAGATATAGTAGACGT	100
CATTTCCGAATACTTAAACTTAGAGAAGGTAGGTTCCAATTACAGAACGA	
ACTGTCCCTTTTACCCTGACGATACACCCTCCTTTTACGTGTCTCCAAGT	200
AAACAAATATTCAAGTGTTTCGGTTGCGGGGTAGGGGGAGACGCGATAAA	
GTTTCGTTTCCCTTTTACGAGGACATCTCCTATTTTGAAGCCGCCCTTGAAC	300
TCGCAAAACGCTACGGAAAGAAATTAGACCTTGAAAAGATATCAAAAGAC	
GAAAAGGTATACGTGGCTCTTGACAGGGTTTGTGATTTCTACAGGGAAAG	400
CCTTCTCAAAAACAGAGAGGCAAGTGAGTACGTAAAGAGTAGGGGAATAG	
ACCCTAAAGTAGCGAGGAAGTTTGATCTTGGGTACGCACCTTCCAGTGAA	500
GCACTCGTAAAAGTCTTAAAAGAGAACGATCTTTTAGAGGCTTACCTTGA	
AACTAAAAACCTCCTTTCTCCTACGAAGGGTGTTTACAGGGATCTCTTTC	600
TTCGGCGTGTTCGTGATCCCGATAAAGGATCCGAGGGGAAGAGTTATAGGT	
TTCGGTGGAAGGAGGATAGTAGAGGACAAATCTCCCAAGTACATAAACTC	700
TCCAGACAGCAGGGTATTTAAAAGGGGGAGAACTTATTCGGTCTTTACG	
AGGCAAAGGAGTATATAAAGGAAGAAGGATTTGCGATACTTGTGGAAGGG	800
TACTTTGACCTTTTGAGACTTTTTTCCGAGGGGAATAAGGAACGTTGTTGC	
ACCCCTCGGTACAGCCCTGACCCAAAATCAGGCAAACCTCCTTTCCAAGT	900
TCACAAAAAAGGTCTACATCCTTTACGACGGAGATGATGCGGGAAGAAAG	
GCTATGAAAAGTGCCATTCCCCTACTCCTCAGTGCAGGAGTGGAAGTTTA	1000
TCCCGTTTACCTCCCCGAAGGATACGATCCCGACGAGTTTATAAAGGAAT	
TCGGGAAAGAGGAATTAAGAAGACTGATAAACAGCTCAGGGGAGCTCTTT	1100
GAAACGCTCATAAAAACCGCAAGGGGAAAACCTTAGAGGAGAAAACGCGTGA	
GTTTCAGGTATTATCTGGGCTTTATTTCCGATGGAGTAAGGCGCTTTGCTC	1200
TGGCTTCGGAGTTTTCACACCAAGTACAAAGTTCCTATGGAAATTTTATTA	
ATGAAAATTGAAAAAAATTCTCAAGAAAAAGAAATTAACTCTCCTTTAA	1300
GGAAAAAATCTTCCTGAAAGGACTGATAGAATTAAAACCAAAAATAGACC	
TTGAAGTCCTGAACTTAAGTCCTGAGTTAAAGGAACTCGCAGTTAACGCC	1400
TTAAACGGAGAGGAGCATTACTTCCAAAAGAAGTTCTCGAGTACCAGGT	
GGATAACTTGGAGAACTTTTAAACAACATCCTTAGGGATTTACAAAAAT	1500
CTGGGAAAAAGAGGAAGAAAAGAGGGTTGAAAAATGTAAATACTTAATTA	
ACTTTAATAAATTTTLAGAGTTAGGA	

FIG. 50

MSSDIDELRREIDIVDVISEYLNLEKVGSNYRTNCPFHPDDTPSFYVSPS	100
KQIFKCFGCGVGDAIKFVSLYEDISYFEAALELAKRYGKKLDLEKISKD	
EKVYVALDRVCDIFYRESLLKNREASEYVKSRGIDPKVARKFDLGYAPSSE	200
ALVKVLKENDLLEAYLETKNLLSPTKGVYRDLFLRRVVIPIKDPGRGVIG	
FGRRIVEDKSPKYINSPDSRVFKKGENLFLGLYEKEYIKEEGFAILVEG	300
YFDLLRLFSEGIRNVVAPLGTALTQNQANLLSKFTKKVYILYDGDAGRK	
AMKSAIPLLLSAGVEVYPVYLPEGYDPDEFIKEFGKEELRRLINSSGELF	400
ETLIKARENLEEKTRFRYYLGFISDGVRRFALASEFHTKYKVPMEILL	
MKIEKNSQEKEIKLSFKEKIFLKGLIELKPKIDLEVLNLSPELKE LAVNA	498
LNGEEHLLPKEVLEYQVDNLEKLFNNILRDLQKSGKKRKKRGLKNVNT	

FIG. 51

REPLACEMENT SHEET

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ATGCAAGATACCGCTACCTGCAGTATTTGTCAGGGGACGGGATTCGTAAA	
GACCGAAGACAACAAGGTAAGGCTCTGCGAATGCAGGTTCAAGAAAAGGG	100
ATGTAAACAGGGAACTAAACATCCCAAAGAGGTACTGGAACGCCAACTTA	
GACACTTACCACCCCAAGAACGTATCCCAGAACAGGGCACTTTTGACGAT	200
AAGGGTCTTCGTCCACAACCTTCAATCCCGAGGAAGGGAAAGGGCTTACCT	
TTGTAGGATCTCCTGGAGTCGGCAAACTCACCTTGCGGTTGCAACATTA	300
AAAGCGATTTATGAGAAGAAGGGAATCAGAGGATACTTCTTCGATACGAA	
GGATCTAATATTCAGGTTAAAACACTTAATGGACGAGGGAAAGGATACAA	400
AGTTTTTTAAAACTGTCTTAACTCACCGGTTTTGGTTCTCGACGACCTC	
GGTTCTGAGAGGCTCAGTGACTGGCAGAGGGAACTCATCTCTTACATAAT	500
CACTTACAGGTATAACAACCTTAAGAGCACGATAATAACCACGAATTACT	
CACTCCAGAGGGAAGAAGAGAGTAGCGTGAGGATAAGTGCGGATCTTGCA	600
AGCAGACTCGGAGAAAACGTAGTTTCAAAAATTTACGAGATGAACGAGTT	
GCTCGTTATAAAGGGTTCCGACCTCAGGAAGTCTAAAAAGCTATCAACCC	700
CATCT	

FIG. 52

MQDTATCSICQGTGFVKTEDNKNVRLCECRFKKRDVNRELNIPKRYWNANL	
DTYHPKNVSQNRALLTIRVVFVHNFNPEEGKGLTFVGSPGVGKTHLAVATL	100
KAIYEKKGIRGYFFDTKDLIFRLKHLMDGKDTKFLKTVLNSPVLVLDL	
GSERLSDWQRELISYIITYRYNNLKSTIITTNYSLQREEESSVRISADLA	200
SRLGENVVSKIYEMNELLVIKGSDLRKS SKKLSTPS	

FIG. 53

REPLACEMENT SHEET

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ATGAAAAAGATTGAAAATTTGAAGTGGAAAAATGTCTCGTTTAAAAGCCT	
GGAAATAGATCCCGATGCAGGTGTGGTTCTCGTTTCCGTGGAAAAATTCT	100
CCGAAGAGATAGAAGACCTTGTGCGTTTACTGGAGAAGAAGACGCGGTTT	
CGAGTCATCGTGAACGGTGTTCAAAAAAGTAACGGGGATCTAAGGGGAAA	200
GATACTTTCCCTTCTCAACGGTAATGTGCCTTACATAAAAGATGTTGTTT	
TCGAAGGAAACAGGCTGATTCTGAAAGTGCTTGGAGATTTTCGCGCGGGAC	300
AGGATCGCCTCCAACTCAGAAGCACGAAAAACAGCTCGATGAACTGCT	
GCCTCCCGGAACAGAGATCATGCTGGAGGTTGTGGAGCCTCCGGAAGATC	400
TTTTGAAAAAGGAAGTACCACAACCAGAAAAGAGAGAAGAACCAAAGGGT	
GAAGAATTGAAGATCGAGGATGAAAACCACATCTTTGGACAGAAACCCAG	500
AAAGATCGTCTTCACCCCTCAAAAATCTTTGAGTACAACAAAAAGACAT	
CGGTGAAGGGCAAGATCTTCAAAATAGAGAAGATCGAGGGGAAAAGAACG	600
GTCCTTCTGATTTACCTGACAGACGGAGAAGATTCTCTGATCTGCAAAGT	
CTTCAACGACGTTGAAAAGGTCTGAAGGGGAAAGTATCGGTGGGAGACGTGA	700
TCGTTGCCACAGGAGACCTCCTTCTCGAAAACGGGGAGCCCACCCTTTAC	
GTGAAGGGAATCACAAAACCTCCCGAAGCGAAAAGGATGGACAAATCTCC	800
GGTTAAGAGGGTGGAGCTCCACGCCCATAACCAAGTTCAGCGATCAGGACG	
CAATAACAGATGTGAACGAATATGTGAAACGAGCCAAGGAATGGGGCTTT	900
CCCGCGATAGCCCTCACGGATCATGGGAACGTTTCAGGCCATACCTTACTT	
CTACGACGCGGCGGAAAGAAGCTGGAATAAAGCCCATTTTCGGTATCGAAG	1000
CGTATCTGGTGAGTGACGTGGAGCCCGTCATAAGGAATCTCTCCGACGAT	
TCGACGTTTGGAGATGCCACGTTTCGTCTCGTCCCTCGACTTCGAGACGACGG	1100
TCTCGACCCGCAGGTGGATGAGATCATCGAGATAGGAGCGGTGAAGATAC	
AGGGTGGCCAGATAGTGGACGAGTACCACACTCTCATAAAGCCTTCCAGG	1200
GAGATCTCAAGAAAAAGTTCGGAGATCACCGGAATCACTCAAGAGATGCT	
GGAAAACAAGAGAAGCATCGAGGAAGTTCTGCCGGAGTTCCTCGGTTTTT	1300
TGGAAGATTCCATCATCGTAGCACACAACGCCAACTTCGACTACAGATTT	
CTGAGGCTGTGGATCAAAAAAGTGATGGGATTGGACTGGGAAAGACCCTA	1400
CATAGATACGCTCGCCCTCGCAAAGTCCCTTCTCAAACCTGAGAAGCTACT	
CTCTGGATTCCGTTGTGGAAAAGCTCGGATTGGGTCCCTTCCGGCACCAC	1500
AGGGCCCTGGATGACGCGAGGGTCAACCGCTCAGGTTTTCTCAGGTTTCGT	
TGAGATGATGAAGAAGATCGGTATCACGAAGCTTTTCAGAAATGGAGAAGT	1600
TGAAGGATACGATAGACTACACCGCGTTGAAACCCTTCCACTGCACGATC	
CTCGTTCAGAACAAAAAGGGATTGAAAAACCTATACAAACTGGTTTTCTGA	1700
TTCTTATATAAAGTACTTCTACGGTGTTCGAGGATCCTCAAAGTGAGC	
TCATCGAGAACAGAGAAGGACTGCTCGTGGGTAGCGCGTGTATCTCCGGT	1800
GAGCTCGGACGTGCCGCCCTCGAAGGAGCGAGTGATTTCAGAACTCGAAGA	
GATCGCGAAGTTCTACGACTACATAGAAGTCATGCCGCTCGACGTTATAG	1900
CCGAAGATGAAGAAGACCTAGACAGAGAAAGACTGAAAGAAGTGTACCGA	
AAACTCTACAGAATAGCGAAAAAATTGAACAAGTTCGTCTCATGACCGG	2000
TGATGTTTCAATTCCTCGATCCCGAAGATGCCAGGGGCAGAGCTGCACTTC	
TGGCACCTCAGGGAAACAGAACTTCGAGAATCAGCCCGCACTCTACCTC	2100
AGAACGACCGAAGAAATGCTCGAGAAGGCGATAGAGATATTTCGAAGATGA	
AGAGATCGCGAGGGGAAGTCGTGATAGAGAATCCCAACAGAATAGCCGATA	2200
TGATCGAGGAAGTGCAGCCGCTCGAGAAAAAACTTCACCCGCCGATCATA	
GAGAACGCCGATGAAATAGTGAGAAACCTCACCATGAAGCGGGCGTACGA	2300
GATCTACGGTGATCCGCTTCCCGAAATCGTCCAGAAGCGTGTGAAAAGG	

FIG. 54A

REPLACEMENT SHEET

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MKKIENLKWKNVSFKSLEIDPDAGVVLVSVEKFSEEIEDLVRLLEKKTRF	100
RVIVNGVQKSNGDLRGKILSLLNGNVPYIKDVVFEGNRLILKVLGDFARD	
RIASKLRSTKKQLDELLPPGTEIMLEVVEPPEDLLKKEVPQPEKREEPKG	200
EELKIEDENHIFGQKPRKIVFTPSKIFEYNKKTSVKGKIFKIEKIEGKRT	
VLLIYLTGDGEDSLICKVFNDVEKVEGKVSVDVIVATGDLLENGEPTLY	300
VKGITKLPEAKRMDKSPVKRVELHAHTKFSQDAITDVNEYVKRAKEWGF	
PAIALTDHGNVQAIPYFYDAAKEAGIKPIFGIEAYLVSDVEPVIRNLSDD	400
STFGDATFVVLDFETTGLDPQVDEIIIEIGAVKIQGGQIVDEYHTLIKPSR	
EISRKSSEITGITQEMLNKRSEIEVLPEFLGFLEDSIIIVAHNANFDYRF	500
LRLWIKKVMGLDWERPYIDTLALAKSLLKLRSYSLDSVVEKLGLGPFRRH	
RALDDARVTAQVFLRFVEMMKKIGITKLSEMEKLKDTIDYTALKPFHCTI	600
LVQNKKGKLNLYKLVSDSYIKYFYGVPRILKSELIENTREGLLVGSACISG	
ELGRAALEGASDSELEETAKFYDYIEVMPLDVIAEDEEDLDRERLKEVYR	700
KLYRIAKKLNKFVMTGDVHFLDPEDARGRAALLAPQGNRNFENQPALYL	
RTTEEMLEKAIEIFEDEEIAREVVIENPNRIADMIEEVQPLEKKLHPPII	800
ENADEIVRNLTMKRAYEIIYGDPLPEIVQKRVEKELNAIINHGYAVLYLIA	
QELVQKSMDSGYVVGSRGSVSSLVANLLGITEVNPLPPHYRCPECKYFE	900
VVEDDRYGAGYDLPNKNCPRCGAPLRKDGHGIPFETFMGFEGDKVPDIDL	
NFSGEYQERAHRFVEELFGKDHVYRAGTINTIAERSAVGYVRSYEEKTGK	1000
KLRKAEMERLVSMITGVKRTTGQHPGGLMIIPKDKEVYDFTPIQYPANDR	
NAGVFTTHFAYETIHDDLKIDALGHDDPTFIKMLKDLTGIDPMTIPMDD	1100
PDTLAIFSSVKPLGVDPELESDVGTYGIPEFGTEFVRGMLVETRPKSFA	
ELVRISGLSHGTDVWLNWARDWINLGYAKLSEVISCRDDIMNFLIHKGME	1200
PSLAFKIMENVRKGKGITEEMESEMRRLKVPEWFIESCKRIKYLFPKAHA	
VAYVSMAFRIAYFKVHYPLQFYAAYFTTIKGDQFDPVLVLRGKEAIKRRLR	1300
ELKAMPAKDAQKKNEVSVLEVALEMILRGFSFLPPDIFKSDAKKFLIEGN	
SLRIPFNKLPGLGDSVAESIIRAREEKPFTSVEDLMKRTKVKNKHIELMK	1367
SLGVLGDLPETEQFTLF	

FIG. 55

REPLACEMENT SHEET

64/83

GTGCTCGCCATGATATGGAACGACACCGTTTTTTTTCGCTCGTAGACACAGA	
AACCACGGGAACCGATCCCTTTGCCGGAGACCGGATAGTTGAAATAGCCG	100
CTGTTCCCTGTCTTCAAGGGGAAGATCTACAGAAACAAAGCGTTTCACTCT	
CTCGTGAATCCCAGAATAAGAATCCCTGCGCTGATTCAGAAAGTTCACGG	200
TATCAGCAACATGGACATCGTGGAAGCGCCAGACATGGACACAGTTTACG	
ATCTTTTTCAGGGATTACGTGAAGGGGAACGGTGCTCGTGTTTCACAACGCC	300
AACTTCGACCTCACTTTTCTGGATATGATGGCAAAGGAAACGGGAACTT	
TCCAATAACGAATCCCTACATCGACACACTCGATCTTTCAGAAGAGATCT	400
TTGGAAGGCCTCATTTCTCTCAAATGGCTCTCCGAAAGACTTGGAATAAAA	
ACCACGATACGGCACCGTGCTCTTCCAGATGCCCTGGTGACCGCAAGAGT	500
TTTTGTGAAGCTTGTTGAATTTCTTGGTGAAAACAGGGTCAACGAATTCA	
TACGTGGAACACGGGGG	567

FIG. 56

MLAMIWNDTVFCVVDTE TTGTDPFAGDRIVEIAAVPVFKGKIYRNKAFHS	
LVNPRIRIPALIQKVHG ISNMDIVEAPDMDTVYDLFRDYVKGTVLVFNHNA	100
NFDLTFLDMMAKETGNFPITNPYIDTLDLSEEI FGRPHSLKWL SERLGIK	
TTIRHRALPDALVTARVFVKLV EFLGENRVNEFIRGKRG	189

FIG. 57

REPLACEMENT SHEET

65/83

GTGGAAGTTCTTTACAGGAAGTACAGGCCAAAGACTTTTTCTGAGGTTGT	
CAATCAGGATCATGTGAAGAAGGCAATAATCGGTGCTATTCAGAAGAACA	100
GCGTGGCCACGGATACATATTCGCCGGTCCGAGGGGAACGGGGAAGACT	
ACTCTTGCCAGAATTCTCGCAAATCCCTGAACTGTGAGAACAGAAAGGG	200
AGTTGAACCCTGCAATTCCTGCAGAGCCTGCAGAGAGATAGACGAGGGAA	
CCTTCATGGACGTGATAGAGCTCGACGCGGCCTCCAACAGAGGAATAGAC	300
GAGATCAGAAGAATCAGAGACGCCGTTGGATACAGGCCGATGGAAGGTAA	
ATACAAAGTCTACATAATAGACGAAGTTCACATGCTCACGAAAGAAGCCT	400
TCAACGCGCTCCTCAAAACACTCGAAGAACCTCCTTCCCACGTCGTGTTT	
GTGCTGGCAACGACAAACCTTGAGAAGGTTCTTCCCACGATTATCTCGAG	500
ATGTCAGGTTTTTCGAGTTCAGAAACATTCCCGACGAGCTCATCGAAAAGA	
GGCTCCAGGAAGTTGCGGAGGCTGAAGGAATAGAGATAGACAGGGGAAGCT	600
CTGAGCTTCATCGCAAAAAGAGCCTCTGGAGGCTTGAGAGACGCGCTCAC	
CATGCTCGAGCAGGTGTGGAAGTTCTCGGAAGGAAAGATAGATCTCGAGA	700
CGGTACACAGGGCGCTCGGGTTGATACCGATACAGGTTGTTTCGCGATTAC	
GTGAACGCTATCTTTTCTGGTGATGTGAAAAGGGTCTTCACCGTTCTCGA	800
CGACGTCTATTACAGCGGGAAGGACTACGAGGTGCTCATTCAGGAAGCAG	
TCGAGGATCTGGTCGAAGACCTGGAAAGGGAGAGAGGGGTTTACCAGGTT	900
TCAGCGAACGATATAGTTCAGGTTTCGAGACAACCTTCTGAATCTTCTGAG	
AGAGATAAAGTTCGCCGAAGAAAAACGACTCGTCTGTAAAGTGGGTTCGG	1000
CTTACATAGCGACGAGGTTCTCCACCACAAACGTTTCAGGAAAACGATGTC	
AGAGAAAAAAACGATAATTCAAATGTACAGCAGAAAGAAGAGAAGAAAGA	1100
AACGGTGAAGGCAAAAGAAGAAAAACAGGAAGACAGCGAGTTCGAGAAAC	
GCTTCAAAGAACTCATGGAAGAACTGAAAGAAAAGGGCGATCTCTCTATC	1200
TTTGTCGCTCTCAGCCTCTCAGAGGTGCAGTTTGACGGAGAAAAGGTGAT	
TATTTCTTTTGATTTCATCGAAAGCTATGCATTACGAGTTGATGAAGAAAA	1300
AACTGCCTGAGCTGGAAAACATTTTTTCTAGAAAACCTCGGGAAAAAAGTA	
GAAGTTGAACTTCGACTGATGGGAAAAGAAGAAACAATCGAGAAGGTTTC	1400
TCAGAAGATCCTGAGATTGTTTGAACAGGAGGGA	

FIG. 58

MEVLYRKYPKTFSEVVNQDHVKKAIIGAIQKNSVAHGYIFAGPRGTGKT	
TLARILAKSLNCENRKGVEPCNSCRACREIDEGTFMDVIELDAASNRGID	100
EIRRIRDAVGYPMEGKYKVYIIDDEVHMLTKEAFNALLKTLEPPSHVVF	
VLATTNLEKVPPTIISRCQVFEFRNIPDELIEKRLQEVAEAEAGIEIDREA	200
LSFIAKRASGGLRDALTMLEQVWKFSEGKIDLETVHRALGLIPIQVVRDY	
VNAIFSGDVKRVTFLDDVYYSGKDYEVLIQEAVEDLVEDLERERGVYQV	300
SANDIVQVSRQLLNLLREIKFAEEKRLVCKVGSAYIATRFSTTNVQENDV	
REKNDNSNVQQKEEKKETVKAKEEKQEDSEFEKRFKELMEELKEKGDLSI	400
FVALSLSEVQFDGEKVIISFDSSKAMHYELMKKKLPELENIFSRKLGKKV	
EVELRLMGKEETIEKVSQKILRLFEQEG	478

FIG. 59

REPLACEMENT SHEET

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ATGAAAGTAACCGTCACGACTCTTGAATTGAAAGACAAAATAACCATCGC	
CTCAAAAGCGCTCGCAAAGAAATCCGTGAAACCCATTCTTGCTGGATTTC	100
TTTTTCGAAGTGAAAGATGGAAATTTCTACATCTGCGCGACCGATCTCGAG	
ACCGGAGTCAAAGCAACCGTGAATGCCGCTGAAATCTCCGGTGAGGCACG	200
TTTTGTGGTACCAGGAGATGTCATTTCAGAAGATGGTCAAGGTTCTCCCAG	
ATGAGATAACGGAACTTTCTTTAGAGGGGGATGCTCTTGTTATAAGTTCT	300
GGAAGCACCGTTTTTCAGGATCACCAACCATGCCCCGCGGACGAATTTCCAGA	
GATAACGCCTGCCGAGTCTGGAATAACCTTCGAAGTTGACACTTCGCTCC	400
TCGAGGAAATGGTTGAAAAGGTCATCTTCGCCGCTGCCAAAGACGAGTTC	
ATGCGAAATCTGAATGGAGTTTTCTGGGAACTCCACAAGAATCTTCTCAG	500
GCTGGTTGCAAGTGATGGTTTCAGACTTGCACTTGCTGAAGAGCAGATAG	
AAAACGAGGAAGAGGCGAGTTTCTTGCTCTCTTTGAAGAGCATGAAAGAA	600
GTTCAAAACGTGCTGGACAACACAACGGAGCCGACTATAACGGTGAGGTA	
CGATGGAAGAAGGGTTTTCTCTGTCGACAAATGATGTAGAAACGGTGATGA	700
GAGTGGTCGACGCTGAATTTCCCGATTACAAAAGGGTGATCCCCGAACT	
TTCAAAACGAAAGTGTTGGTTTCCAGAAAAGAACTCAGGGAATCTTTGAA	800
GAGGGTGATGGTGATTGCCAGCAAGGGAAGCGAGTCCGTGAAGTTCGAAA	
TAGAAGAAAACGTTATGAGACTTGTGAGCAAGAGCCCGGATTATGGAGAA	900
GTGGTCGATGAAGTTGAAGTTCAAAAAGAAGGGGAAGATCTCGTGATCGC	
TTTCAACCCGAAGTTCATCGAGGACGTTTTGAAGCACATTGAGACTGAAG	1000
AAATCGAAATGAACTTCGTTGATTCTACCAGTCCATGTCAGATAAATCCA	
CTCGATATTTCTGGATACCTTTACATAGTGATGCCCATCAGACTGGCA	1098

FIG. 60

MKVTVTTLLELKDKITIASKALAKKSVKPILAGFLFEVKDGNFYICATDLE	
TGVKATVNAAEISGEARFVVPGDVIQKMVKVLPDEITELSLEGDALVISS	100
GSTVFRITTMPADEFPEITPAESGITFEVDTSLLLEEMVEKVIFAAAKDEF	
MRNLNGVFWELHKNLLRLVASDGFRLALAEQIENEEEASFLLSLKSMKE	200
VQNVLDNNTTEPTITVRYDGRRVSLSTNDVETVMRVVDAEFPDYKRVIPET	
FKTKVVVSRKELRESLKRVMVIAASKGSESVKFEIEENVMRLVSKSPDYGE	300
VVDEVEVQKEGEDLVIAFNPKFIEDVLKHIETEEIEMNFVDSTSPCQINP	
LDISGYLYIVMPIRLA	366

FIG. 61

REPLACEMENT SHEET

67/83

ATGCCAGTCACGTTTCTCACAGGTACTGCAGAACTCAGAAGGAAGAATT	
GATAAAGAACTCCTGAAGGATGGTAACGTGGAGTACATAAGGATCCATC	100
CGGAGGATCCCGACAAGATCGATTTTCATAAGGTCTTTACTCAGGACAAAG	
ACGATCTTTTCCAACAAGACGATCATTGACATCGTCAATTTTCGATGAGTG	200
GAAAGCACAGGAGCAGAAGCGTCTCGTTGAACTTTTGAAAAACGTACCGG	
AAGACGTTTCATATCTTCATCCGTTCTCAAAAAACAGGTGGAAAGGGAGTA	300
GCGCTGGAGCTTCCGAAGCCATGGGAAACGGACAAGTGGCTTGAGTGGAT	
AGAAAAGCGCTTCAGGGAGAAATGGTTTGCTCATCGATAAAGATGCCCTTC	400
AGCTGTTTTTCTCCAAGGTTGGAACGAACGACCTGATCATAGAAAGGGAG	
ATTGAAAAACTGAAAGCTTATTCCGAGGACAGAAAGATAACGGTAGAAGA	500
CGTGGAAGAGGTCGTTTTTTACCTATCAGACTCCGGGATACGATGATTTTT	
GCTTTGCTGTTTCCGAAGGAAAAAGGAAGCTCGCTCACTCTCTTCTGTCTG	600
CAGCTGTGGAAAACCAACAGAGTCCGTGGTGATTGCCACTGTCCTTGCGAA	
TCACCTCTTGATCTCTTCAAAATCCTCGTTCTTGTGACAAAGAAAAGAT	700
ACTACACCTGGCCTGATGTGTCCAGGGTGTCCAAAGAGCTGGGAATTCCC	
GTTCCCTCGTGTGGCTCGTTTCCTCGGTTTCTCCTTTAAGACCTGGAAATT	800
CAAGGTGATGAACCACCTCCTCTACTACGATGTGAAGAAGGTTAGAAAGA	
TACTGAGGGATCTCTACGATCTGGACAGAGCCGTGAAAAGCGAAGAAGAT	900
CCAAAACCGTTCTTCCACGAGTTCATAGAAGAGGTGGCACTGGATGTATA	
TTCTCTTCAGAGAGATGAAGAA	972

FIG. 62

MPVTFLTGTAEQTQKEELIKLLKDG NVEYIRIHPEDPDKIDFIRSLLR TK	
TIFSNKTIIDIVNFDEWKAQEQKRLVELLKNVPEDVHIFIRSQKTGGKGV	100
ALELPKPWETDKWLEWIEKRFRENGLLIDKDALQLFFSKVGTNDLI IERE	
IEKLKAYSEDRKITVEDVEEVVFTYQTPGYDDFCFAVSEGKRKLAHSLLS	200
QLWKTTESVVIATVLANHFLDLFKILVLVTKKRYYTWPDVSRVSKELGIP	
VPRVARFLGFSFKTWKFKVMNHLLYYDVKKVRKILRDLYDLDRAVKSEED	300
PKPFFHEFIEEVALDVYSLQRDEE	

FIG. 63

REPLACEMENT SHEET

68/83

ATGAACGATTTGATCAGAAAGTACGCTAAAGATCAACTGGAAACTTTGAA	
AAGGATCATAGAAAAGTCTGAAGGAATATCCATCCTCATAAATGGAGAAG	100
ATCTCTCGTATCCGAGAGAAGTATCCCTTGAAC TTCCCGAGTACGTGGAG	
AAATTTCCCCCGAAGGCCTCGGATGTTCTGGAGATAGATCCCGAGGGGGA	200
GAACATAGGCATAGACGACATCAGAACGATAAAGGACTTCCTGAACTACA	
GCCCCGAGCTCTACACGAGAAAGTACGTGATAGTCCACGACTGTGAAAGA	300
ATGACCCAGCAGGCGGCGAACGCGTTTCTGAAGGCCCTTGAAGAACCACC	
AGAATACGCTGTGATCGTTCTGAACACTCGCCGCTGGCATTATCTACTGC	400
CGACGATAAAGAGCCGAGTGTTTCAAGAGTGGTTGTGAACGTTCCAAAGGAG	
TTCAAGAGATCTCGTGAAAGAGAGAAAATAGGAGATCTCTGGGAGGAACTTCC	500
ACTTCTTGAGAGAGACTTCAAACCGGCTCTCGAAGCCTACAAACTTGGTG	
CGGAAAAACTTTCTGGATTGATGGAAAGTCTCAAAGTTTTGGAGACGGAA	600
AACTCTTGAAAAAGGTCCTTTCAAAGGCCTCGAAGGTTATCTCGCATG	
TAGGGAGCTCCTGGAGAGATTTTCAAAGGTGGAATCGAAGGAATTCTTTG	700
CGCTTTTTTGATCAGGTGACTAACACGATAACAGGAAAAGACGCGTTTCTT	
TTGATCCAGAGACTGACAAGAATCATTCTCCACGAAAACACATGGGAAAG	800
CGTTGAAGATCAAAAAAGCGTGTCTTTCCTCGATTCAATTCTCAGGGTGA	
AGATAGCGAATCTGAACAACAACTCACTCTGATGAACATCCTCGCGATA	900
CACAGAGAGAGAAAGAGAGGTGTCAACGCTTGGAGC	

FIG. 64

MNDLIRKYAKDQLETLKRIIEKSEGISILINGEDLSYPREVSLELPEYVE	
KFPPKASDVLEIDPEGENIGIDDIRTIKDFLNYSPELYTRKYVIVHDCER	100
MTQQAANAFLKALEEPPEYAVIVLNTRRWYLLPTIKSRVFRVVVNPKE	
FRDLVKEKIGDLWEELPLLERDFKTALEAYKLGAEKLSGLMESLKVLETE	200
KLLKKVLSKGLEGYLACRELLERFSKVESKEFFALFDQVTNTITGKDAFL	
LIQRLTRIILHENTWESVEDKSVSFLDSILRVKIANLNNKLTLMNILAIH	300
RERKRGVNAWS	

FIG. 65

REPLACEMENT
SHEET

69/83

ATGTCTTTCTTCAACAAGATCATACTCATAGGAAGACTCGTGAGAGATCC	
CGAAGAGAGATACACGCTCAGCGGAACTCCAGTCACCACCTTCACCATAG	100
CGGTGGACAGGGTTCCTCAGAAAGAACGCGCCGGACGACGCTCAAACGACT	
GATTTCTTCAGGATCGTCACCTTTGGAAGACTGGCAGAGTTCGCTAGAAC	200
CTATCTCACCAAAGGAAGGCTCGTTCTCGTCGAAGGTGAAATGAGAATGA	
GAAGATGGGAAACACCCACTGGAGAAAAGAGGGTATCTCCGGAGGTTGTC	300
GCAAACGTTGTTAGATTTCATGGACAGAAAACCTGCTGAAACAGTTAGCGA	
GAAGAGAGGAGCTGGAAATACCGGAAGAAGACTTTTCCAGCGATACCT	400
TCAGTGAAGATGAACCACCATTT	

FIG. 66

MSFFNKIILIGRLVRDPEERYTLSGTPVTTFTIAVDRVPRKNAPDDAQT	
DFFRIVTFGRLEAFARTYLTKGRLVLVEGEMRMRRWETPTGEKRVSPVV	100
ANVVRFMDRKPAETVSETEEELEIPEEDFSSDTFSEDEPPF	

FIG. 67

REPLACEMENT SHEET

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ATGCGTGTTCCTCCCGCACAACTTAGAGGCCGAAGTTGCTGTGCTCGGAAG	
CATATTGATAGATCCGTCGGTAATAAACGACGTTCTTGAAATTTTGAGCC	100
ACGAAGATTTCTATCTGAAAAAACACCAACACATCTTCAGAGCGATGGAA	
GAGCTTTACGACGAAGGAAAACCGGTGGACGTGGTTTCCGTCTGTGACAA	200
GCTTCAAAGCATGGGAAAACCTCGAGGAAGTAGGTGGAGATCTGGAAGTGG	
CCCAGCTCGCTGAGGCTGTGCCAGTTCTGCACACGCACTTCACTACGCG	300
GAGATCGTCAAGGAAAAATCCATTCTGAGGAACTCATTGAGATCTCCAG	
AAAAATCTCAGAAAGTGCCTACATGGAAGAAGATGTGGAGATCCTGCTCG	400
ACAACGCAGAAAAGATGATCTTCGAGATCTCAGAGATGAAAACGACAAAA	
TCCTACGATCATCTGAGAGGCATCATGCACCCGGGTGTTTGAAAACCTGGA	500
GAAGTTTCAAGGAAAGAGCCAACCTTATAGAACCCGGTGTGCTCATAACGG	
GACTACCAACGGGATTCAAAGTCTGGACAAACAGACCACAGGGTTCCAC	600
AGCTCCGATCTGGTGATAATAGCAGCGAGACCCTCCATGGGAAAACCTC	
CTTCGCACTCTCAATAGCGAGGAACATGGCTGTCAATTTCGAAATCCCCG	700
TCGGAATATTTCAGTCTCGAGATGTCCAAGGAACAGCTCGCTCAAAGACTA	
CTCAGCATGGAGTCCGGTGTGGATCTTTACAGCATCAGAACAGGATACCT	800
GGATCAGGAGAAGTGGGAAAGACTCACAATAGCGGCTTCTAAACTCTACA	
AAGCACCCATAGTTGTGGACGATGAGTCACTCCTCGATCCGCGATCGTTG	900
AGGGCAAAAGCGAGAAGGATGAAAAAGAATACGATGTAAAAGCCATTTT	
TGTCGACTATCTCCAGCTCATGCACCTGAAAGGAAGAAAAGAAAGCAGAC	1000
AGCAGGAGATATCCGAGATCTCGAGATCTCTGAAGCTCCTTGCGAGGGAA	
CTCGACATAGTGGTGATAGCGCTTTCACAGCTTTCGAGGGCCGTTAGAACA	1100
GAGAGAAGACAAAAGACCGAGGCTGAGTGACCTCAGGGAATCCGGTGCGA	
TAGAACAGGACGCAGACACAGTCATCTTCATCTACAGGGAGGAATATTAC	1200
AGGAGCAAAAAATCCAAAGAGGAAAGCAAGCTTCACGAACCTCACGAAGC	
TGAAATCATAATAGGTAAACAGAGAAACGGTCCCGTTGGAACGATCACTC	1300
TGATCTTCGACCCCAGAACGGTTACGTTCCATGAAGTCGATGTGGTGCAT	
TCA	1353

FIG. 68

MRVPPHNLEAEVAVLGSILIDPSVINDVLEILSHEDFYLLKKHQHIFRAME	
ELYDEGKPVVDVSVCDKLQSMGKLEEVGGDLEVAQLAEAVPSSAHALHYA	100
EIVKEKSILRKLIEISRKISESAYMEEDVEILLDNAEKMIFEISEMKTTK	
SYDHLRGIMHRVFENLENFRERANLIEPGVLITGLPTGFKSLDKQTTGFH	200
SSDLVIIAARPSMGKTSFALSIAARNMAVNFEIPVGIFSLEMSKEQLAQL	
LSMESGVDLYSIRTGYLDQEKWERLTIAASKLYKAPIVVDDESLLDPRSL	300
RAKARRMKKEYDVKAIFVDYLQLMHLKGRKESRQOEISEISRSLKLLARE	
LDIVVIALSQLSRAVEQREDKRPRLSDLRESGAIEQDADTVIFIYREEYY	400
RSKKSKEESKLHEPHEAEIIIGKQRNGPVGTTITLIFDPRTVTFHEVDVVH	
S	451

FIG. 69

REPLACEMENT SHEET

71/83

GTGATTCCCTCGAGAGGTCATCGAGGAAATAAAAGAAAAGGTTGACATCGT	
AGAGGTCATTTCCGAGTACGTGAATCTTACCCGGGTAGGTTCCCTCCTACA	100
GGGCTCTCTGTCCCTTTCATTCAGAAACCAATCCTTCTTTCTACGTTTCAT	
CCGGGTTTGAAGATATACCATTGTTTCGGCTGCGGTGCGAGTGGAGACGT	200
CATCAAATTTCTTCAAGAAATGGAAGGGATCAGTTTCCAGGAAGCGCTGG	
AAAGACTTGCCAAAAGAGCTGGGATTGATCTTTCTCTCTACAGAACAGAA	300
GGGACTTCTGAATACGGAAAATACATTCGTTTGTACGAAGAAACGTGGAA	
AAGGTACGTCAAAGAGCTGGAGAAATCGAAAGAGGCAAAGACTATTTAA	400
AAAGCAGAGGCTTCTCTGAAGAAGATATAGCAAAGTTCGGCTTTGGGTAC	
GTCCCCAAGAGATCCAGCATCTCTATAGAAGTTGCAGAAGGCATGAACAT	500
AACACTGGAAGAACTTGTGAGATACGGTATCGCGCTGAAAAAGGGTGATC	
GATTCGTTGATAGATTTCGAAGGAAGAATCGTTGTTCCAATAAAGAACGAC	600
AGTGGTCATATTGTGGCTTTTGGTGGGCGTGCTCTCGGCAACGAAGAACC	
GAAGTATTTGAACTCTCCAGAGACCAGGTATTTTTTCGAAGAAGAAGACCC	700
TTTTTCTCTTCGATGAGGCGAAAAAAGTGGCAAAGAGGTTGGTTTTTTTC	
GTCATCACCGAAGGCTACTTCGACGCGCTCGCATTCAGAAAGGATGGAAT	800
ACCAACGGCGGTCTGCTGTTCTTGGGGCGAGTCTTTCAGAGAGGCGATTCT	
TAAAACTTTCGGCGTATTCGAAAAACGTCATACTGTGTTTCGATAATGAC	900
AAAGCAGGCTTCAGAGCCACTCTCAAATCCCTCGAGGATCTCCTAGACTA	
CGAATTCAACGTGCTTGTGGCAACCCCCCTCTCCTTACAAAGACCCAGATG	1000
AACTCTTTTCAGAAAGAAGGAGAAGGTTTCATTGAAAAAGATGCTGAAAAAC	
TCGCGTTTCGTTTCGAATATTTTTCTGGTGACGGCTGGTGAGGTCTTCTTTGA	1100
CAGGAACAGCCCCGCGGGTGTGAGATCCTACCTTTCTTTCCTCAAAGGTT	
GGGTCCAAAAGATGAGAAGGAAAGGATATTTGAAACACATAGAAAATCTC	1200
GTGAATGAGGTTTCATCTTCTCTCCAGATACCAGAAAACCAGATTTTGAA	
CTTTTTTTGAAAGCGACAGGTCTAACACTATGCCTGTTTCATGAGACCAAGT	1300
CGTCAAAGGTTTACGATGAGGGGAGAGGACTGGCTTATTTGTTTTTTGAAC	
TACGAGGATTTGAGGGAAAAGATTCTGGAACCTGGACTTAGAGGTACTGGA	1400
AGATAAAAACGCGAGGGAGTTTTTCAAGAGAGTCTCACTGGGAGAAGATT	
TGAACAAAGTCATAGAAAACCTTCCCAAAGAGCTGAAAGACTGGATTTTTT	1500
GAGACAATAGAAAGCATTCCTCCTCCAAAGGATCCCGAGAAATTCCTCGG	
TGACCTCTCCGAAAAGTTGAAAATCCGACGGATAGAGAGACGTATCGCAG	1600
AAATAGATGATATGATAAAGAAAGCTTCAAACGATGAAGAAAGGCGTCTT	
CTTCTCTCTATGAAAGTGATCTCCTCAGAAAAATAAAGAGGAGG	1695

FIG. 70

REPLACEMENT SHEET

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MIPREVIEEIKEKVDIVEVISEYVNLTRVGSSYRALCPFHSETNPSFYVH	100
PGLKIYHCFGCGASGDVIKFLQEMEGISFQEALERLAKRAGIDLSLYRTE	
GTSEYGKYIRLYEETWKRYVKELEKSKEAKDYLSRGFSEEDIKFGFGY	200
VPKRSSISIEVAEGMNITLEELVRYGIALKKGDRFVDRFEGRIVVPIKND	
SGHIVAFGGRALGNEEPKYLNSPETRYFSKKKTLFLFDEAKKVAKEVGFF	300
VITEGYFDALAFRKDGIP TAVAVLGASLSREAILKLSAYSKNVILCFDND	
KAGFRATLKSLEDLLDYEFNVLVATPSPYKDPDEL FQKEGEGSLKKMLKN	400
SRSFEYFLVTAGEVFFDRNSPAGVRSYLSFLKGWVQKMRRKGYLKHIENL	
VNEVSSSLQIPENQILNFFESDRSNTMPVHETKSSKVYDEGRGLAYLFLN	500
YEDLREKILELDLEVLEDKNAREFFKRVS LGEDLNKVIENFPKELKDWIF	
ETIESIPPPKDPEKFLGDLSEK LKIRRIERIAEIDDMIKKASNDEERRL	565
LLSMKVDLLRKIKRR	

FIG. 71

ATGGCTCTACACCCGGCTCACCCTGGGGCAATAATCGGGCACGAGGCCGT	100
TCTCGCCCTCCTTCCCCGCCTCACCGCCAGACCCTGCTCTTCTCCGGCC	
CCGAGGGGGTGGGGCGGCGCACCGTGGCCCGCTGGTACGCCTGGGGGCTC	200
AACCGCGGCTTCCCCCGCCCTCCCTGGGGGAGCACCCGGACGTCTCTGA	
GGTGGGGCCCAAGGCCCGGGACCTCCGGGGCCGGGCCGAGGTGCGGCTGG	300
AGGAGGTGGCGCCCCCTCTTGGAGTGGTGCTCCAGCCACCCCCGGGAGCGG	
GTGAAGGTGGCCATCCTGGACTCGGCCACCTCCTCACCGAGGCCCGCCGC	400
CAACGCCCTCCTCAAGCTCCTGGAGGAGCCCCCTTCCTACGCCCGCATCG	
TCCTCATCGCCCCAAGCCGCGCCACCCTCCTCCCCACCCTGGCCTCCCGG	500
GCCACGGAGGTGGCATTCGCCCCCGTGCCCGAGGAGGCCCTGCGCGCCCT	
CACCCAGGACCCGGAGCTCCTCCGCTACGCCGCCGGGGCCCCGGGCCGCC	600
TCCTTAGGGCCCTCCAGGACCCGGAGGGGTACCGGGCCCGCATGGCCAGG	
GCGCAAAGGGTCCTGAAAGCCCCGCCCCCTGGAGCGCCTCGCTTTGCTTCG	700
GGAGCTTTTGGCCGAGGAGGAGGGGGTCCACGCCCTCCACGCCGTCTTAA	
AGCGCCCGGAGACCTCCTTGCCCTGGAGCGGGCGCGGGAGGCCCTGGAG	800
GGGTACGTGAGCCCCGAGCTGGTCCTCGCCCGGCTGGCCTTAGACTTAGA	
GACA	

FIG. 72

MALHPAHPGAIIGHEAVLALLPRLTAQTLLFSGPEGVGRRTVARWYAWGL	100
NRGFPPPSLGEHPDVLEVGP KARDLRGRAEVRLEEVAPLLEWCSSHPRER	
VKVAILDSAHLLTEAAANALLK LLEEPPSYARIVLIAPSRATLLPTLASR	200
ATEVAFAPVPEEALRAL TQDPELLRYAAGAPGRLLRALQDPEGYRARMAR	
AQRVLKAPPLERLALLRELLAEEEGVHALHAVLKRPEHLLALERAREALE	268
GYVSPELVLARLALDLET	

FIG. 73

REPLACEMENT
SHEET

73/83

ATGCTGGACCTGAGGGAGGTGGGGGAGGCGGAGTGGAAGGCCCTAAAGCC	
CCTTTTGGAAAGCGTGCCCGAGGGCGTCCCCGTCTCCTCCTGGACCCTA	100
AGCCAAGCCCCCTCCCGGGCGGCCTTCTACCGGAACCGGGAAAGGCGGGAC	
TTCCCCACCCCCAAGGGGAAGGACCTGGTGCGGCACCTGGAAAACCGGGC	200
CAAGCGCCTGGGGCTCAGGCTCCCGGGCGGGGTGGCCCAGTACCTGGCCT	
CCCTGGAGGGGGACCTCGAGGCCCTGGAGCGGGAGCTGGAGAAGCTTGCC	300
CTCCTCTCCCCACCCCTCACCCCTGGAGAAGGTGGAGAAGGTGGTGGCCCT	
GAGGCCCCCCCCCTCACGGGCTTTGACCTGGTGCGCTCCGTCTCCTGGAGAAGG	400
ACCCAAGGAGGCCCTCCTGCGCCTAGGCGGCCTCAAGGAGGAGGGGGAG	
GAGCCCCCTCAGGCTCCTCGGGGCCCTCTCCTGGCAGTTCGCCCTCCTCGC	500
CCGGGCCTTCTTCTCCTCCCGGAAAACCCAGGCCCAAGGAGGAGGACC	
TCGCCCCGCTCGAGGCCACCCCTACGCCGCCCGCCGCGCCCTGGAGGCG	600
GCGAAGCGCCTCACGGAAGAGGCCCTCAAGGAGGCCCTGGACGCCCTCAT	
GGAGGCGGAAAAGAGGGCCAAGGGGGGAAAGACCCGTGGCTCGCCCTGG	700
AGGCGGCGGTCTCCGCCTCGCCCCGTTGA	

FIG. 74

MVIAFTGDPFLAREALLEEARLRGLSRFTEPTPEALAQALAPGLFGGGGA	
MLDLREVGEAEWKALKPLLESVPEGVPVLLLDPKPSPSRAAFYRNRERRD	100
FPTPKGKDLVRHLENRAKRLGLRLPGGVAQYLASLEGDLEALERELEKLA	
LLSPPLTLEKVEKVVALRPPLTGFDLVRVLEKDPKEALLRLGGLKEEGE	200
EPLRLLGALSWQFALLARAFFLLRENPRPKEEDLARLEAHPYAARRALEA	
AKRLTEEALKEALDALMEAEKRAKGGKDPWLALAAVLRLAR	292

FIG. 75

REPLACEMENT
SHEET

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ATGGCTCGAGGCCTGAACCGCGTTTTCTCATCGGCGCCCTCGCCACCCG	
GCCGGACATGCGCTACACCCCGGCGGGGCTCGCCATTTTGGACCTGACCC	100
TCGCCGGTCAGGACCTGCTTCTTTCCGATAACGGGGGGGAACCGGAGGTG	
TCCTGGTACCACCGGGTGAGGCTCTTAGGCCGCCAGGCGGAGATGTGGGG	200
CGACCTCTTGACCAAGGGCAGCTCGTCTTCGTGGAGGGCCGCCTGGAGT	
ACCGCCAGTGGGAAAGGGAGGGGGAGAAGCGGAGCGAGCTCCAGATCCGG	300
GCCGACTTCCGGACCCCCCTGGACGACCGGGGGAAGAAGCGGGCGGAGGAC	
AGCCGGGGCCAGCCCAGGCTCCGCGCCGCCCTGAACCAGGTCTTCCTCAT	400
GGGCAACCTGACCCGGGACCCGGAACCTCCGCTACACCCCCCAGGGCACCG	
CGGTGGCCCCGGCTGGGCCTGGCGGTGAACGAGCGCCGCCAGGGGGCGGAG	500
GAGCGCACCCACTTCGTGGAGGTTTCAGGCCTGGCGCGACCTGGCGGAGTG	
GGCCGCCGAGCTGAGGAAGGGCGACGGCCTTTTCGTGATCGGCAGGTTGG	600
TGAACGACTCCTGGACCAGCTCCAGCGGCGAGCGGCGCTTCCAGACCCGT	
GTGGAGGCCCTCAGGCTGGAGCGCCCCACCCGTGGACCTGCCCAGGCCTG	700
CCCAGGCCGGCGGAACAGGTCCCGCGAAGTCCAGACGGGTGGGGTGGACA	
TTGACGAAGGCTTGGAAGACTTTCGCGCCGAGGAGGATTTGCCGTTTTGA	800
GCACGAA	

FIG. 76

MARGLNRVFLIGALATRPDMRYTPAGLAILDLTLAGQDLLLLSDNGGEPEV	
SWYHRVRLLRQAEMWGDLLDQGQLVFVEGRLEYRQWEREGEKRSELQIR	100
ADFLDPLDDRGGKKRAEDSRGQPRRLRAALNQVFLMGNLTRDPELRYTPQGT	
AVARLGLAVNERRQGAEERTHFVEVQAWRDLAEWAAELRKGDGLFVIGRL	200
VNDSWTSSSGERRFQTRVEALRLERPTRGPAQACPGRNRNSREVQTGGVD	
IDEGLEDFPPEEDLPF	266

FIG. 77

REPLACEMENT SHEET

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AATTCCGACATTTCAATTGAATCGTTTATTCCGCTTGAAAAAGAAGGCAA	
GTTGCTCGTTGATGTGAAAAGACCGGGGAGCATCGTACTGCAGGCGCGCT	100
TTTTCTCTGAAATCGTGAAAAAACTGCCGCAACAAACGGTGGAATCGAA	
ACGGAAGACAACCTTTTTGACGATCATCCGCTCGGGGCACTCAGAATTCCG	200
CCTCAATGGGCTAAACGCCGACGAATATCCGCGCCTGCCGCAAATTGAAG	
AAGAAAACGTGTTTCAAATCCCGGCTGATTTATTGAAAACCGTGATTTCGG	300
CAAACGGTGTTTCGCCGTTTCTACATCGGAAACGCGCCCAATCTTGACAGG	
TGTCAACTGGAAAGTTGAACATGGCGAGCTTGTCTGCACAGCGACCGACA	400
GTCATCGCTTAGCCATGCGCAAAGTGAAAATTGAGTCGGAAAATGAAGTA	
TCATACAACGTCGTCATCCCTGGAAAAAGTCTTAATGAGCTCAGCAAAAT	500
TTTGATGACGGCAACCACCCGGTGACATCGTCATGACAGCCAATCAAG	
TGCTATTTAAGGCCGAGCACCTTCTCTTCTTTTCCCGGCTGCTTGACGGC	600
AACTATCCGGAGACGGCCCGCTTGATTCCAACAGAAAGCAAACGACCAT	
GATCGTCAATGCAAAAGAGTTTCTGCAGGCAATCGACCGAGCGTCCTTGC	700
TTGCTCGAGAAGGAAGGAACAACGTTGTGAAACTGACGACGCTTCCTGGA	
GGAATGCTCGAAATTTCTTCGATTTCTCCGAGATCGGGAAAGTGACGGAG	800
CAGCTGCAAACGGAGTCTCTTGAAGGGGAAGAGTTGAACATTTTCGTTTCA	
CGCGAAATATATGATGGACGCGTTGCGGGCGCTTGATGGAACAGACATTT	900
CAAATCAGCTTCACTGGGGCCATGCGGCCGTTCTGTTGCGCCCGCTTCA	
ACCGATTGATGCTTCAGCTCATTTTGCCGGTGAGAACATAT	992

FIG. 78

NSDISIIESFIPILEKEGKLLVDVKRPGSIVLQARFFSEIVKKLPQQTVEI	
ETEDNFLTIIRSGHSEFRLNGLNADEYPRLPQIEEENVFQIPADLLKTVI	100
RQTVFAVSTSETRPILTGVDNWKVEHGELVCTATDSHRLAMRKVKIIESEN	
EVSYNVVIPIGKSLNELSKIILDDGNHPVDIVMTANQVLFKAHLLFFSRL	200
LDGNYPETARLIPTESKTTMIVNAKEFLQAI DRASLLAREGRNNVVKLTT	
LPGGMLEISSISPEIGKVTEQLQTESLEGEELNISFSAKYMMDALRALDG	300
TDIQISFTGAMRPFLRLPLHTDSMLQLILPVRTY	

FIG. 79

REPLACEMENT
SHEET

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ATGATTAACCGCGTCATTTTGGTCGGCAGGTTAACGAGAGATCCGGAGTT	
GCGTTACACTCCAAGCGGAGTGGCTGTTGCCACGTTTACGCTCGCGGTCA	100
ACCGTCCGTTTACAAATCAGCAGGGCGAGCGGGAAACGGATTTTATTCAA	
TGTGTCGTTTGGCGCCGCCAGGCGGAAAACGTCGCCAACTTTTGA AAAA	200
GGGGAGCTTGGCTGGTGTCGATGGCCGACTGCAAACCCGCAGCTATGAAA	
ATCAAGAAGGTCGGCGTGTGTACGTGACGGAAGTGGTGGCTGATAGCGTC	300
CAATTTCTTGAGCCGAAAGGAACGAGCGAGCAGCGAGGGGCGACAGCAGG	
CGGCTACTATGGGGATCCATTCCCATTCGGGCAAGATCAGAACCACCAAT	400
ATCCGAACGAAAAAGGGTTTGGCCGCATCGATGACGATCCTTTGCGCAAT	
GACGGCCAGCCGATCGATATTTCTGATGATGATTTGCCGTTT	492

FIG. 80

MINRVILVGRLTRDPELRYTPSGVAVATFTLAVNRPFTNQSYENQEGRRV	
YVTEVVADSVQFLEPKGTSEQRGATAGGYQGERETDFIQCVVWRRQAEN	100
VANFLKKGSLAGVDGRLQTRGDPFPFGQDQNHQYPNEKGFGRIDDDPFAN	
DGQPIDISDDDLPF	164

FIG. 81

REPLACEMENT SHEET

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ATGCTGGAACGCGTATGGGGAAACATTGAAAAACGGCGTTTTTCTCCCCT	
TTATTTATTATACGGCAATGAGCCGTTTTTATTAACGGAAACGTATGAGC	100
GATTGGTGAACGCAGCGCTTGGCCCCGAGGAGCGGGAGTGGAACCTGGCT	
GTGTACGACTGCGAGGAAACGCCGATCGAGGCGGCGCTTGAGGAGGCCGA	200
GACGGTGCCGTTTTTTCGGCGAGCGGCGTGTTCATTCTCATCAAGCATCCAT	
ATTTTTTTTACGTCTGAAAAAGAGAAGGAGATCGAACATGATTTGGCGAAG	300
CTGGAGGCGTACTTGAAGGCGCCGTCGCCGTTTTTCGATCGTCGTCTTTTT	
CGCGCCGTACGAGAAGCTTGATGAGCGAAAAAAATTACGAAGCTCGCCA	400
AAGAGCAAAGCGAAGTCGTCATCGCCGCCCCGCTCGCCGAAGCGGAGCTG	
CGTGCCTGGGTGCGGCGCCGCATCGAGAGCCAAGGGGCGCAAGCAAGCGA	500
CGAGGCGATTGATGTCCTGTTGCGGCGGGCCGGGACGCAGCTTTCGCCT	
TGGCGAATGAAATCGATAAATTGGCCCTGTTTGCCGGATCGGGCGGAACC	600
ATCGAGGCGGCGGCGGTTGAGCGGCTTGTCGCCCGCACGCCGGAAGAAAA	
CGTATTTGTGCTTGTCGAGCAAGTGGCGAAGCGCGACATTCCAGCAGCGT	700
TGCAGACGTTTTTATGATCTGCTTGAAAAACAATGAAGAGCCGATCAAAATT	
TTGGCGTTGCTCGCCGCCCATTTCCGCTTGCTTTCGCAAGTGAAATGGCT	800
TGCCTCCTTAGGCTACGGACAGGCGCAAATTGCTGCGGCGCTCAAGGTGC	
ACCCGTTCCGCGTCAAGCTCGCTCTTGCTCAAGCGGCCCGCTTCGCTGAC	900
GGAGAGCTTGCTGAGGCGATCAACGAGCTCGCTGACGCCGATTACGAAGT	
GAAAAGCGGGGCGGTTCGATCGCCGGTTGGCCGTTGAGCTGCTTCTGATGC	1000
GCTGGGGCGCCCGCCCGGCGCAAGCGGGGCGCCACGGCCGGCGG	

FIG. 82

MLERVWGNIEKRRFSPLYLLYGNEPFLLTETYERLVNAALGPEEREWNLA	
VYDCEETPIEAALEEAETVPFFGERRVILIKHPYFFTSEKEKEIEHDLAK	100
LEAYLKAPSPFSIVVFFAPYEKLDERKKITKLAKSEQSEVVIAAPLAEAE	
RAWVRRRIESQGAQASDEAIDVLLRRAGTQLSALANEIDKLALFAGSGGT	200
IEAAVERLVARTPEENVFVLVEQVAKRDI PAALQTFYDLLENNEEPIKI	
LALLAAHFRLLSQVKWLASLGYGQAQIAAALKVHPFRVKLALAQAARFAD	300
GELAEAINELADADYEVKSGAVDRRLAVELLMLRWGARPAQAGRHGR	

FIG. 83

REPLACEMENT SHEET

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ATGCGATGGGAACAGCTAGCGAAACGCCAGCCGGTGGTGGCGAAAATGCT	
GCAAAGCGGCTTGGA AAAAGGGCGGATTTCTCATGCGTACTTGTTTGAGG	100
GGCAGCGGGGGACGGGCA AAAAAGCGGCCAGTTTGTTGTTGGCGAAACGT	
TTGTTTTGTCTGTCCCCAATCGGAGTTTCCCCGTGTCTAGAGTGCCGCAA	200
CTGCCGGCGCATCGACTCCGGCAACCACCCTGACGTCCGGGTGATCGGCC	
CAGATGGAGGATCAATCA AAAAAGGAACAAATCGAATGGCTGCAGCAAGAG	300
TTCTCGAAAACAGCGGTTCGAGTCGGATAAAAAAATGTACATCGTTGAGCA	
CGCCGATCAAATGACGACAAGCGCTGCCAACAGCCTTCTGAAATTTTTTG	400
AAGAGCCGCATCCGGGGACGGTGGCGGTATTGCTGACTGAGCAATACCAC	
CGCCTGCTAGGGACGATCGTTTCCCGCTGTCAAGTGCTTTCGTTCCGGCC	500
GTTGCCCGCCGGCAGAGCTCGCCCAGGGACTTGTCGAGGAGCACGTGCCGT	
TGCCGTTGGCGCTGTTGGCTGCCCATTTGACAAACAGCTTCGAGGAAGCA	600
CTGGCGCTTGCCAAAGATAGTTGGTTTGCCGAGGCGCGAACATTAGTGCT	
ACAATGGTATGAGATGCTGGGCAAGCCGGAGCTGCAGCTTTTGTTTTTCA	700
TCCACGACCGCTTGTTTCCGCATTTTTTTGAAAGCCATCAGCTTGACCTT	
GGACTTG	757

FIG. 84

MRWEQLAKRQPVVAKMLQSGLEKGRISHAYLFEGQRGTGKKAASLLLAKR	
LFCLSPIGVSPCLECRNCRRIDSGNHDPDVRVIGPDGGSIKKEQIEWLQQE	100
FSKTAVESDKKMYIVEHADQMTTSAANSLLKFLEEPHPGTVAVLLTEQYH	
RLLGTIVSRCQVLSFRPLPPAELAQGLVEEHVPLPLALLAAHLTNSFEEA	200
LALAKDSWFAEARTLVLQWYEMLGKPELQLLFFIHDRLFPHFLESHQLDL	
GL	252

FIG. 85

REPLACEMENT SHEET

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GTGGCATAACCAAGCGTTATATCGCGTGTTTCGGCCGCAGCGCTTTGCGGA	100
CATGGTCGGCCAAGAACACGTGACCAAGACGTTGCAAAGCGCCCTGCTTC	
AACATAAAATATCGCACGCTTACTTATTTTCCGGCCCGCGCGGTACAGGA	200
AAAACGAGCGCAGCGAAAAATTTTCGCCAAGGCGGTCAACTGTGAACAGGC	
GCCAGCGGCGGAGCCATGCAATGAGTGTCAGCTTGCCCTCGGCATTACGA	300
ATGGAACGGTTCCCGATGTGCTGGAAATTGACGCTGCTTCCAACAACCGC	
GTCGATGAAATTCGTGATATCCGTGAGAAGGTGAAATTTGCGCCAACGTC	400
GGCCCGCTACAAAGTGTATATCATCGACGAGGTGCATATGCTGTGATCG	
GTGCGTTTAAACGCGCTGTTGAAAACGTTGGAGGAGCCGCCGAAACACGTC	500
ATTTTCATTTTGGCCACGACCGAGCCGCACAAAATTCGGGCGACGATCAT	
TTCCCGCTGCCAACGGTTCGATTTTCGCCGCATCCCGCTTCAGGCGATCG	600
TTTCACGGCTAAAGTACGTCGCAAGCGCCCAAGGTGTCGAGGCGTCAGAT	
GAGGCATTGTCCGCCATCGCCCGTGCTGCAGACGGGGGGATGCGCGATGC	700
GCTCAGCTTGCTTGATCAAGCCATTTTCGTTTCAGCGACGGGAAACTTCGGC	
TCGACGACGTGCTGGCGATGACCGGGGCTGCATCATTTGCCGCCTTATCG	800
AGCTTCATCGAAGCCATCCACCGCAAAGATACAGCGGCGGTTCTTCAGCA	
CTTGGAACGATGATGGCGCAAGGGAAAGATCCGCATCGTTTGGTTGAAG	900
ACTTGATTTTGTACTATCGCGATTTATTGCTGTACAAAACCGCTCCCTAT	
GTGGAGGGAGCGATTCAAATTGCTGTCGTTGACGAAGCGTTCACTTCACT	1000
GTCGGAAATGATTCCGGTTTCCAATTTATACGAGGCCATCGAGTTGCTGA	
ACAAAAGCCAGCAAGAGATGAAGTGGACAAACCACCCGCGCCTTCTGTTG	1100
GAAGTGCGCTTGTGAAACTTTGCCATCCATCAGCCGCCGCCCGTCGCT	
GTCGGCTTCCGAGTTGGAACCGTTGATAAAGCGGATTGAAACGCTGGAGG	1200
CGGAATTGCGGCGCCTGAAGGAACAACCGCCTGCCCTCCGTGACCGCC	
GCGCCGGTGAAAAAACTGTCCAAACCGATGAAAACGGGGGGATATAAAGC	1300
CCCGGTTGGCCGCATTTACGAGCTGTTGAAACAGGCGACGCATGAAGATT	
TAGCTTTGGTGAAAGGATGCTGGGCGGATGTGCTCGACACGTTGAAACGG	1400
CAGCATAAAGTGTCGCACGCTGCCTTGCTGCAAGAGAGCGAGCCGGTTGC	
AGCGAGCGCCTCAGCGTTTGTATTAAAAATTCAAATACGAAATCCACTGCA	1500
AAATGGCGACCGATCCCACAAGTTCGGTCAAAGAAAACGTCGAAGCGATT	
TTGTTTGAGCTGACAAACCGCCGCTTTGAAATGGTAGCCATTCCGGAGGG	1600
AGAATGGGGAAAAATAAGAGAAGAGTTCATCCGCAATAAGGACGCCATGG	
TGGAAAAAAGCGAAGAAGATCCGTTAATCGCCGAAGCGAAGCGGCTGTTT	1677
GGCGAAGAGCTGATCGAAATTAAAGAA	

FIG. 86

REPLACEMENT SHEET

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VAYQALYRVFRPQRFADMVGQEHVTKTLQSALLQHKISHAYLFSGPRGTG	
KTSAAKIFAKAVNCEQAPAAEPCNECPACLGITNGTVPDVLEIDAASNNR	100
VDEIRDIREKVKFAPTSARYKVYIIDEVHMLSIGAFNALLKTLEPPKHV	
IFILATTEPHKIPATIIISRCQRFDFRRIPLQAIVSRLKYVASAQGVEASD	200
EALSAIARAADGGMRDALSLLDQAISFSDGKLRLDDVLAMTGAASFAALS	
SFIEAIHRKDTAAVLQHLETMMAQGKDPHRLVEDLILYYRDLLLYKTAPY	300
VEGAIQIAVVDEAFTSLSEMI PVSNLYEAI ELLNKSQQEMKWTNHPRLLL	400
EVALVKLCHPSAAAPSLSASELEPLIKRIETLEAELRRLKEQPPAPPSTA	
APVKKLSKPMKTGGYKAPVGRIYELLKQATHEDLALVKGCWADVLDTLKR	500
QHKVSHAALLQESEPVAASASAFVLKFKYEIHCKMATDPTSSVKENVEAI	
LFELTNRRRFEMVAIPEGEWGKIREEFIRNKDAMVEKSEEDPLIAEAKRLF	559
GEELIEIKE	

FIG. 87

REPLACEMENT SHEET

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ATGGTGACAAAAGAGCAAAAAGAGCGGTTTCTCATCCTGCTTGAGCAGCT	
GAAGATGACGTTCGACGAATGGATGCCGCATTTTTCGTGAGGCAGCCATTC	100
GCAAAGTCGTGATCGATAAAGAGGAGAAAAGCTGGCATTTTTATTTTCAG	
TTTCGACAACGTGCTGCCGGTTCATGTATACAAAACGTTTGCCGATCGGCT	200
GCAGACGGCGTTCCGCCATATCGCCGCCGTCCGCCATACGATGGAGGTCG	
AAGCGCCGCGCGTAACCTGAGGCGGATGTGCAGGCGTATTGGCCGCTTTGC	300
CTTGCCGAGCTGCAAGAAGGCATGTCGCCGCTTGTCGATTGGCTCAGCCG	
GCAGACGCCTGAGCTGAAAGGAAACAAGCTGCTTGTCGTTGCCCGCCATG	400
AAGCGGAAGCGCTGGCGATCAAACGGCGGTTTCGCCAAAAAATCGCTGAT	
GTGTACGCTTCGTTTGGGTTTCCCCCCTTCAGCTTGACGTCAGCGTCGA	500
GCCGTCCAAGCAAGAAATGGAACAGTTTTTTGGCGCAAAAACAGCAAGAGG	
ACGAAGAGCGAGCGCTTGCTGTACTGACCGATTTAGCGAGGGAAGAAGAA	600
AAGGCCGCGTCTGCGCCGCGTCCGGTCCGCTTGTCATCGGCTATCCGAT	
CCGCGACGAGGAGCCGGTGCGGCGGCTTGAAACGATCGTCGAAGAAGAGC	700
GGCGCGTTCGTTGTGCAAGGCTATGTATTTGACGCCGAAGTGAGCGAATTA	
AAAAGCGGCCGCGACGCTGTTGACCATGAAAATCACAGATTACACGAACTC	800
GATTTTAGTCAAAATGTTCTCGCGCGACAAAGAGGACGCCGAGCTTATGA	
GCGGCGTCAAAAAGGCATGTGGGTGAAAGTGCGCGGCAGCGTGCAAAAC	900
GATACGTTTCGTCCGTGATTTGGTCATCATCGCCAACGATTTGAACGAAAT	
CGCCGCAAAACGAACGGCAAGATACGGCGCCGGAAGGGGAAAAGAGGGTCG	1000
AGCTCCATTTGCATACCCCGATGAGCCAAATGGACGCGGTCACCTCGGTG	
ACAAAACCTCATTTGAGCAAGCGAAAAAATGGGGGCATCCGGCGATCGCCGT	1100
CACCGACCATGCCGTTGTTTCAGTCGTTTCCGGAGGCCTACAGCGCGGCGA	
AAAAACACGGCATGAAGGTCATTTACGGCCTTGAGGCGAACATCGTCGAC	1200
GATGGCGTGCCGATCGCCTACAATGAGACGCACCGCCGTCTTTCGGAGGA	
AACGTACGTCGTCTTTGACGTCGAGACGACGGGCCTGTCGGCTGTGTACA	1300
ATACGATCATTTGAGCTGGCGGCGGTGAAAGTGAAAGACGGCGAGATCATC	
GACCGATTTCATGTCGTTTGCCAACCCTGGACATCCGTTGTCGGTGACAAC	1400
GATGGAGCTGACTGGGATCACCGATGAGATGGTGAAAGACGCCCCGAAGC	
CGGACGAGGTGCTAGCCCGTTTTTGTGACTGGGCCGGCGATGCGACGCTT	1500
GTTGCCCAACAACGCCAGCTTTGACATCGGTTTTTTTAAACGCGGGCCTCGC	
TCGCATGGGGCGCGGCAAAATCGCGAATCCAGTCATCGATACGCTCGAGC	1600
TGGCCCGTTTTTTTATACCCGGATTTGAAAAACCATCGGCTCAATACATTG	
TGCAAAAAATTTGACATTGAATTGACGCAGCATCACCGCGCCATCTACGA	1700
CGCGGAGGCGACCGGGCATTTGCTTATGCGGCTGTTGAAGGAAGCGGAAG	
AGCGCGGCATACTGTTTCATGACGAATTAAACAGCCGCACGCACAGCGAA	1800
GCGTCCTATCGGCTTGCGCGCCCGTTCCATGTGACGCTGTTGGCGCAAAA	
CGAGACTGGATTGAAAAATTTGTTCAAGCTTGTGTCAATTGTTCGCACATTC	1900
AATATTTTTCACCGTGTGCCGCGCATCCCGCGCTCCGTGCTCGTCAAGCAC	
CGCGACGGCCTGCTTGTCGGCTCGGGCTGCGACAAAGGAGAGCTGTTTGA	2000
CAACTTGATCCAAAAGGCGCCGGAAGAAGTCGAAGACATCGCCCGTTTTT	
ACGATTTTCTTGAAGTGCATCCGCCGGACGTGTACAAGCCGCTCATCGAG	2100
ATGGATTATGTGAAAGACGAAGAGATGATCAAAAACATCATCCGCAGCAT	
CGTCGCCCTTGGTGAGAAGCTTGACATCCCGGTTGTCGCCACTGGCAACG	2200

FIG. 88A

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TCCATTACTTGAACCCAGAAGATAAAAATTTACCGGAAAATCTTAATCCAT	
TCGCAAGGCGGGGCGAATCCGCTCAACCGCCATGAACTGCCGGATGTATA	2300
TTTCCGTACGACGAATGAAATGCTTGACTGCTTCTCGTTTTTAGGGCCGG	
AAAAAGCGAAGGAAATCGTCGTTGACAACACGCAAAAAATCGCTTCGTTA	2400
ATCGGCGATGTCAAGCCGATCAAAGATGAGCTGTATACGCCGCGCATTGA	
AGGGGCGGACGAGGAAATCAGGGAAATGAGCTACCGGCGGGCGAAGGAAA	2500
TTTACGGCGACCCGTTGCCGAAACTTGTTGAAGAGCGGCTTGAGAAGGAG	
CTAAAAAGCATCATCGGCCATGGCTTTGCCGTCATTTATTTGATCTCGCA	2600
CAAGCTTGTGAAAAAATCGCTCGATGACGGCTACCTTGTCGGGTTCGCGCG	
GATCGGTTCGGCTCGTCGTTTGTTCGCGACGATGACGGAAATCACCGAGGTC	2700
AATCCGCTGCCGCCGCATTACGTTTGCCCGAACTGCAAGCATTCGGAGTT	
CTTTAACGACGGTTCAGTCGGCTCAGGGTTTGATTTGCCGGATAAAAACT	2800
GCCCGCGATGTGGGACGAAATACAAGAAAGACGGGCACGACATCCCGTTT	
GAGACGTTTCTCGGCTTTAAAGGCGACAAAGTGCCGGATATCGACTTGAA	2900
CTTTTCCGGCGAATACCAGCCGCGCGCCACAACCTATACGAAAGTGCTGT	
TTGGCGAAGACAACGTCTACCGCGCCGGGACGATTGGCACGGTCGCTGAC	3000
AAAACGGCGTACGGATTTGTCAAAGCGTATGCGAGCGACCATAACTTAGA	
GCTGCGCGGCGCGGAAATCGACGGCTCGCGGCTGGCTGCACCGGGGTGAA	3100
GCGGACGACCGGGCAGCATCCGGGCGGCATCATCGTCGTCCCGGATTATA	
TGGAAATTTACGATTTTACGCCGATTCAATATCCGGCCGATGACACGTCC	3200
TCTGAATGGCGGACGACCCATTTTCGACTTCCATTCGATCCACGACAATTT	
GTTGAAGCTCGATATTCTCGGGCACGACGATCCGACGGTCATTCGCATGC	3300
TGCAAGATTTAAGCGGCATCGATCCGAAAACGATCCCGACCGACGACCCG	
GATGTGATGGGCATTTTTCAGCAGCACCGAGCCGCTTGGCGTTACGCCGGA	3400
GCAAATCATGTGCAATGTCGGCACGATCGGCATTCCGGAGTTTGGCACGC	
GCTTCGTTTCGGCAAATGTTGGAAGAGACAAGGCCAAAAACGTTTTCCGAA	3500
CTCGTGCAAATTTCCGGCTTGTTCGCACGGCACCGATGTGTGGCTCGGCAA	
CGCGCAAGAGCTCATTCAAACGGCACGTGTACGTTATCGGAAGTCATCG	3600
GCTGCCGCGACGACATTATGGTCTATTTGATTTACCGCGGGCTCGAGCCG	
TCGCTCGCTTTTAAATCATGGAATCCGTGCGCAAAGGAAAAGGCTTAAC	3700
GCCGGAGTTTGAAGCAGAAATGCGCAAACATGACGTGCCGGAGTGGTACA	
TCGATTCATGCAAAAAAATCAAGTACATGTTCCCGAAAGCGCACGCCGCC	3800
GCCTACGTGTTAATGGCGGTGCGCATCGCCTACTTTAAGGTGCACCATCC	
GCTTTTGTATTACGCGTCGTACTTTACGGTGCGGGCGGAGGACTTTGACC	3900
TTGACGCCATGATCAAAGGATCACCCGCCATTCGCAAGCGGATTGAGGAA	
ATCAACGCCAAAGGCATTCAGGCGACGGCGAAAGAAAAAAGCTTGCTCAC	4000
GGTTCTTGAGGTGGCCTTAGAGATGTGCGAGCGCGGCTTTTCCTTTAAAA	
ATATCGATTTGTACCGCTCGCAGGCGACGGAATTCGTTCATTGACGGCAAT	4100
TCTCTCATTCCGCCGTTCAACGCCATTCCGGGGCTTGGGACGAACGTGGC	
GCAGGCGATCGTGCGCGCCCGCGAGGAAGGCGAGTTTTTGTCTGAAGGAGG	4200
ATTTGCAACAGCGCGGCAAATTGTCTGAAAACGCTGCTCGAGTATCTAGAA	
AGCCGCGGCTGCCTTGACTCGCTTCCAGACCATAACCAGCTGTCTGCTGTT	4300

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FIG. 88B

REPLACEMENT SHEET

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MVTKEQKERFLILLEQLKMTSDEWMPHFREAAIRKVVIDKEEKSWHFYFQ	100
FDNVLPVHVYKTFADRLQTAFRHIAAVRHTMEVEAPRVTEADVQAYWPLC	
LAELQEGMSPLVDWLSRQTPELKGNKLLVVARHEAEALAIKRRFAKKIAD	200
VYASFGFPPLQLDVSVEPSKQEMEQLAQKQEQEDEERALAVLTDLAREEE	
KAASAPPSGPLVIGYPIRDEEPVRRLETIVEEERRVVVQGYVFDAEVSEL	300
KSGRTLITMKITDYTNSILVKMFSRDKEDAELMSGVKKGMWVKVRSVQN	
DTFVRDLVIIANDLNEIAANERQDTAPEGEKRVELHLHTPMSQMDAVTSV	400
TKLIEQAKKWGHPAIAVTDHAVVQSFPEAYSAAKKHGMKVIYGLEANIVD	
DGVPIAYNETHRRLSEETYVVFVETTTGLSAVYNTIIELA AVKVKDGEII	500
DRFMSFANPGHPLSVTTMELTGITDEMVKDAPKPDEV LARFVDWAGDATL	
VAHNASFDIGFLNAGLARMGRGKIANPVIDTLELARFLYPDLKNHRLNTL	600
CKKFDIELTQHHRAIYDAEATGHLLMROLLKEAEERGILFHDELNSRTHSE	
ASYRLARPFHVTLTLLAQNETGLKNLFLKLVSLSHIQYFHRVPRI PRSVLVKH	700
RDGLLVGSGCDKGELFDNLIQKAPEEVEDIARFYDFLEVHPPDVYKPLIE	
MDYVKDEEMIKNIIRSIVALGEKLDIPVVATGNVHYLNPEDKIYRKILIH	800
SQGGANPLNRHEL PDVYFRTTNEMLDCFSFLGPEKAKEIVDNTQKIASL	
IGDVKPIKDELYTPRIEGADEEIREMSYRRAKEIYGDPLPKLVEERLEKE	900
LKSIIGHGFAVIYLI SHKLVKKSLLDDGYLVGSRGSSVGFVATMTEITEV	
NPLPPHYVCPNCKHSEFFNDGSGVSGFDLPDKNCPRCGTTYKKDGHDI PF	1000
ETFLGFKGDKVPDIDLNFSGEYQPRAHNYTKVLFGEDNVYRAGTIGTVAD	
KTAYGFVKAYASDHNLELRGAEIDL AAGCTGVKRTTGQHPGGIIVVPDYM	1100
EIYDFTPIQYPADDT SSEWRTTHFDHFSIHDNLLKLDILGHDDPTVIRML	
QDL SGIDPKTIPTDDPDVMGIFSSTEPLGVTPEQIMCNVGTIGIPEFGTR	1200
FVRQMLEETRPKTFSELVQISGLSHGTDVWLGN AQELIQNGTCTLSEVIG	
CRDDIMVYLIYRGLEPSLAFKIMESVRKGKGLTPEFEAEMRKHDVPEWYI	1300
DSCKKIKYMFPAHAAA YVLMAVRIAYFKVHHPLLYYASYFTVRAEDFDL	
DAMIKGSPAIRKRIEEINAKGIQATAKEKSLLT VLEVALEM CERGF S FKN	1400
IDLYRSQATEFVIDGNSLI PPFNAIPGLGTNVAQAIVRAREEGEFLSKED	
LQQRGKLSKTLLEYLESRGCLDSL PDHNQLSLF	

FIG. 89